THE BRITISH JOURNAL

OF

OPHTHALMOLOGY

AUGUST, 1928

COMMUNICATIONS

OPHTHALMIC LEECHDOMS

BY

R. R. JAMES

LONDON

IN the years 1864, 1865, 1866, were published in the Rolls Series, three volumes by the Rev. Oswald Cockayne, entitled, *Leechdoms, Wortcunning and Starcraft in Early England.* These have been long out of print and are now very scarce. I was fortunate, not long ago, in securing a set, and, for the benefit of readers of the BRITISH JOURNAL OF OPHTHALMOLOGY, have transcribed the parts which deal with the eye in the hope that they may prove of interest.

The question of continuity in England after the departure of the Romans and before the pacification of the Heptarchy is a much disputed point. Authorities, such as the late Professor Haverfield and Mr. Collingwood, are in favour of there being no continuity between the Roman and Saxon epochs. On the other hand, Professor Zachrisson, of Upsala, working on place-name material, holds that " for philological reasons a conscious and artificial revival of Roman names is entirely out of the question."

Mr. Cockayne, in his preface, would seem to support the latter tenet. He held that the Saxons accepted Greek and Latin learning, and that the Gothic nations had a knowledge of the kinds and powers of worts, *i.e.*, the practical part of botany : "their medicines must have consisted partly in the application of the qualities of these worts to healing purposes, for otherwise the study was of no real ultility." Charms played a large part. Marcellus, cir. 380 A.D, recommends, "to avoid inflamed eyes, when you see a

star fall or cross the heavens, count quickly, for you will be free from inflammation for as many years as you count numbers." Chastity on the part of the patient and the leech, coupled with a Greek word written on parchment and suspended round the neck, will work wonders. "As soon as a man gets pain in his eyes tie in unwrought flax as many knots as there are letters in his name, pronouncing them as you go, and tie it round his neck."

"For white spot, as cataract, catch a fox alive; cut his tongue out; let him go; dry his tongue and tie it up in a red rag and hang it round the man's neck. If anything to cause annoyance get into a man's eye, with five fingers of the same side as the eye, run the eye over and fumble at it, saying three times, 'tetunc resonco, bregan gresso,' and spit thrice. For the same, shut the vexed eye and say thrice, 'in mon deromarcos axatison,' and spit thrice; this remedy is 'mirificum.' For the same, shut the other eye, touch gently the vexed eye with the ring finger and thumb, and say thrice, 'I buss the Gorgons mouth.' For hordeolum, which is a sore place in the eyelid, of the shape of a barleycorn, take nine grains of barley and with each poke the sore, with everyone saying the magic words, 'kuria kuria kassaria sourophbi,' then throw away the nine, and do the same with seven; throw away seven, and do the same with five, and so with three and one. For the same, take nine grains of barley and poke the sore, and at every poke say, 'pheuge pheuge krithe se diokei,' 'flee, flee, barley thee chaseth.' For the same, touch the sore with the medicinal or ring finger, and say thrice, 'vigaria gasaria.' "

For purposes of amusement these charms may be contrasted with that in the story of a woman who procured an amulet to cure bad eyes. Hopeful of recovery, she refrained from weeping and got well. A zealous opponent of sorcery prevailed on her to give up the amulet, which was found to contain these words: "Der-Teufel cratze dir die Augen aus, und scheisse dir in die Löcher, may the devil scratch thine eyes out, and ——in the holes". The knowledge that she had been imposed upon brought on a relapse of the condition in this case.

The first of these volumes consists of an Anglo-Saxon *Herbarium*, derived partly from Apuleus and partly from Dioscorides, together with the *Medicina de Quadripedibus* of Sextus Placitus, with some fly-leaf leechdoms and charms. The second volume consists of three leech books; the first two form a treatise on medicine with its proper colophon at the end, the third is of a more monkish character. The book probably belonged to the abbey of Glastonbury. In the colophon is the following, "Bald habet hunc librum Cild quem conscribere jussit." Bald was the owner, Cild, the scribe. The former seems to have been an Anglo-Saxon general practitioner, and he had some knowledge

of eye prescriptions. Without wishing to be facetious, may we not consider him as the earliest of our professional ancestors in ophthalmology? Although his treatment for a foreign body in the eye may not have progressed beyond fumbling at the closed eye with his ring finger, we may perhaps credit him with some sense; and I personally like to think of him as the lineal forebear of the ophthalmological giants of the nineteenth century.

In volume I, the herbs are arranged in a sort of index, with the conditions for which they are of use. With regard to ophthalmic complaints, these are generally sore eyes, sometimes, dimness of sight, occasionally, bleared eyes; swelling of the eye is mentioned often, erysipelas, once, headache, more frequently.

I propose to take the various herbs useful for eye conditions and abstract what is said about them in the body of the work.

BETONY. To be gathered in the month of August, without use of iron; when gathered, shake the mould, till none of it cleave thereon, and then dry it in the shade very thoroughly, and with its roots altogether reduce it to dust; then use, and taste of it when thou needest. For sore of eyes, take the roots of the same wort, seethe them in water to the third part (evaporating two thirds of the water), and with the water bathe the eyes, and take leaves of the same wort and bruise them and lay them over the eyes upon the face. For dimness of sight take the same root, by weight one drachm and give (the patient) to drink fasting, then it diminishes the part of the blood from which dimness cometh. For blear eyes, take of the same wort betony, and give (the patient) to swallow, it will do good and will clear the sharpness of the eyes.

MUGWORT. (Artemisia vulgaris). It turneth away the evil eyes of evil men.

RAVENS LEEK. (Orchis.) For sore of eyes, that is, when that one be tearful, take juice of this same wort, and smear the eyes therewith; without delay it removes the sore.

KNOTGRASS. (Polygonum aviculare.) For sore of eyes, before sunrise, or shortly before it begin fully to set, go to the same wort proserpinaca, and scratch it round about with a golden ring, and say that thou wilt take it for leechdom of eyes, and after three days go again thereto before rising of sun, and take it, and hang it about the man's swere (neck); it will profit well.

MAYTHE. (Anthemis nobilis.) For sore of eyes, let a man take ere the upgoing of the sun . . . and when he taketh it, let him say that he will take it against white specks, and against sore of eyes; let him take next the ooze and smear the eyes therewith.

WOOD LETTUCE. For dimness of eyes, it is said that the earn (eagle) when he will upfly, in order that he may see the more brightly, will touch his eyes with the juice, and wet them, and he through that obtains the greatest brightness. Again for dimness of eyes, take juice of this same wort, mixed with old wine and with honey, and let this be collected without smoke. It is best that a man mingle together juice of this wort, and wine and honey, and lay them up in a glass ampulla; use when need be; from this you will observe a wondrous cure.

GARCLIVE. (Agrimony.) For sore of eyes, take this wort, which is named agrimony; pound it so green by itself; if then thou have it not green take it dry and dip it in warm water, so as thou may earliest use it; smear then therewith; hastily it driveth away the fault and the sore from the eyes.

FEVER FUGE, or the lesser Curmel. For sore of eyes, take this same wort's juice; smear the eyes therewith; it heals the thinness of the sight (weakness of vision). Mingle also honey thereto; it benefits similarly dim eyes, so that the brightness (of vision) is restored. If one then fall into this mischief, take a good handful of this same wort, seethe it in wine or in ale, so that of the wine there be an ambur

or jug full; have it stand three days; take then every day when there may be occasion, a half sextarius, mix with honey; then let him drink this fasting.

POPPY. For sore of eyes, that is what we denominate bleariedness, take the root of this wort, which the Greeks name mekona, and the Romans papaver album, and the Engle call white poppy, or the stalk, with the fruit,, lay it to the eyes.

CELANDINE. For dimness of eyes and soreness and obstruction (albugo) take juice of this wort, beaten out of the roots, let that be well pounded with old wine and honey and pepper together, then smear the eyes inwardly. Also, we have found that some men have smeared their eyes with the milk of this same wort, and it was thereby better with them. Again for eyes getting dim, take ooze of this same wort, or the blossoms wrung out, and mixed with honey; mingle then gently hot ashes thereto, and seethe together in a brazen vessel; this is a special leechdom for dimness of eyes.

CHEADLE. (Mercurialis perennis.) For sore of eyes and swelling, take leaves of this same wort, pounded in old wine: lay that to the sore.

HOUNDS HEAD. (Antirrhinum orontium.) For sore of eyes and swelling, take roots of this wort, seethe them in water, and then bathe the eyes with the water; soon it relieves the sore.

RUE. For sore of eyes and swelling, take this same wort rue, well pounded lay it to the sore, also the root pounded, and smear therewith; it well amendeth the sore. For dimness of eyes, the leaves of this same wort, give them (to the patient) to eat fasting, and give (them him) to drink in wine.

RUE. (Ruta Montana.) For dimness of the eyes and for an evil cut, take leaves of this wort, sodden in old wine, then put the extract into a glass vessel; afterwards anoint with the fluid.

BASIL. (Clinopodium vulgare.) For sore and swelling of eyes, pound this same wort in good wine, smear the eyes therewith; thou shalt heal them.

MARCHE. (Apium.) For sore and for swelling of eyes, take this wort, well pounded with bread; lay this to the eyes.

SOUTHERNWOOD. (Artemisia abrotanon.) For sore of eyes, take this same wort, sodden with the wort which is called cydonia, and then pounded with a loaf, as if thou shouldst work a poultice; lay this to the sore, it will be relieved. N.B., this wort is of two kinds, the one is wife, or female, the other wer, or male; and they have in all things alike might against the things of which here before we quoth.

SEMPERVIVUM SEDIFORME. For erysipelatous inflammations, and for sore of eyes, and for foot addle, or gout, take this wort, except the root, pound with smede, or fine flour, in the manner in which thou mightest work up a poultice, lay it to these infirmities; it will alleviate them.

ORPINE or Livelong. Pounded with meal this wort healeth sore eyes.

ELDER. (Sambucus nigra.) For mickle heat and swelling of the eyes, take the self same wort, mingled with meal, and wrought to a cataplasm; lay to the eyes, they be relieved.

MILOTIS. This wort thou shalt take up in the waning of the moon, in the month which hight August; take then the root of this wort, and bind it to a yarn thread, and hang it to thy neck; that year thou shalt not feel dimness of thine eyes, or if it befall thee, it suddenly shall depart, and thou shalt be hale. This leechcraft is a proved one.

This ends the Herbarium. We miss from the descriptions any of the herb eyebright, or euphrasy, also fennel and mallows, which in later times were sovereign cures for ophthalmic conditions. Both the latter herbs find mention in this Herbarium, but not in an ophthalmic capacity. We see that the Anglo- Saxon leech relied principally on extracts from the roots or leaves in water, wine or honey. From the frequent mention of the word poultice, we can imagine that the practitioner in those far off times was much addicted to this old fashioned and rather septic remedy.

The Medicina de Quadripedibus gives the medicinal virtues of the parts of animals, arranged under the headings of the particular animals. As can be imagined all sorts of nastiness find a place, but the eye for the most part is lucky in not having dung or urine advised for its ailments. The following are the ophthalmic portions.

For dimness of eyes, take a foxes gall mingled with honey of dumbledore* (Latin, cum melle attico), and applied to the eyes, it healeth.

For sore of eyes, a hares lung set on and bound fast thereto; the sore will be healed. For dimness of eyes, a hares gall mingled with honey, and smeared with, brighteneth the eyes. For sore of eyes, a hares liver sodden is good to drink in wine, and to bathe the eyes with the broth.

For the men who from the tenth hour of the day see not, let them receive with their eyes the smoke of the same drink, and reek them with the broth; and let them wet the liver, and rub and smear therewith.

For brightness of eyes, gall of a wild buck mingled with field bees honey, and smeared on; the brightness cometh to them.

For dimness of eyes, mingle together a wood goats gall and a little of wine; smear therewith thrice; then be they healed.

For heat and pricking of eyes, new goats cheese set upon the eyes with the eyelids; quickly will be amends for him (the man).

To remove away eye pain (ad glaucomata, Latin) take a wolfs right eye, and prick it to pieces, and bind it to the suffering eye; it maketh the sore to wane, if it frequently be smeared therewith.

Mingle with field bees honey (melle attico), a bulls gall, against obscurity and darkness of the eyes, put it upon the eyes; wonderfully it healeth.

For pain and pricking sensation in the eyes, break to pieces a hounds head; if the right eye ache, take the right eye; if the left ache, take the left eye, and bind it on externally; it healeth well.

Among the fly-leaf leechdoms occur the following which have reference to the eyes.

This is the best eyesalve for eye pain, and for mist, and for pin, and for worms, and for itchings, and for eyes running with teardrops and for every known swelling: take feverfue blossoms, and dills blossoms, and thunder clovers blossoms, and hammer worts blossoms, and wormwood of two kinds, and pulegium, and the netherward part of a lily, and coloured dill, and lovage, and pellitory, and pound the worts together, and boil them together in harts marrow or in his grease, and mingle oil besides; put them a good mickle into the eyes, and smear them outwardly and warm at the fire; and this salve helpeth for any swelling, to swallow it and to smear with it, on whatever limb it may be.

This is efficacious for an eyesalve: take yellow stone (ochre), and salt stone (rock salt), and pepper, and weigh them in a balance, and drive them through a cloth, and put of all equally much, and put all together, and drive again through a linen cloth; this is a tried leechcraft.

The following note on beet might give some credence to the view that our Anglo-Saxon forefathers recognised some connexion between the eyes and chronic headache.

For old and constant head ache, pound the wort which hight beet, and rub up on the temples and top of the head, thou shalt wonder at the leechdom. Again for the same, pound celandine in vinegar and smear the head therewith above the eyes: the man shall soon be better.

The last ophthalmic leechdom in the first volume is for pain in the eye.

---

* Dumbledore—a bumble bee.

It is, take the netherward part of a bulrush, pound it, and wring it through a hair cloth, and add salt; then sqeeze it into the eye.

The rest of the volume deals with charms to find lost cattle, for catching a swarm of bees, etc.

Bald's leech book begins with a list of the contents, the first two paragraphs may be transcribed here.

Leechdoms against all infirmities of the head, and whence comes ache of all or of the half head (hemicrania) and cleansings and swilling against filth and ratten to the health of the head; and how one must tend a broken head, and how if the brain be out.

Leechdoms against all tenderness of the eyes, against mists of the eyes, either of an old or of a young man, and whence that comes, and against white spot and against tears of eyes, and against speck on eyes, against imminutions (contractions of the pupil) and if a man be bleareyed, against pocks on eyes, and against figs (possibly styes) and against worms, or insects; and eye salves of every kind.

The leechdoms for headache are for the most part not worth recording here, but the following is of interest:—For head wark, take elecampane and groundsel and fen cress and gitrife, boil them in water, make them steam upon the eyes, when it is hot, and rub about the eyes with the worts so hot.

Bald's leechdoms for the eyes are as follows:—

Leechdoms for mistiness of the eyes; take juice or blossoms of celandine, mingle with honey of dumble dores (melle attico) introduce it into a brazen vessel, half warm it neatly on warm gledes, till it be sodden. This is a good leechdom for dimness of eyes. For the same mingle the juice of wild rue, dewey and bruised, mingle with equally much of filtered honey, smear the eyes with that. For mistiness of eyes many men, lest their eyes should suffer the disease, look into cold water and then are able to see far; that harmeth not the vision, but much wine drinking and other sweetened drinks and meats, and those especially which remain in the upper region of the wamb and cannot digest, but there form evil humours and thick ones; leek and colewort and all that are so austere are to be avoided, and care must be had that a man lie not in bed in day time supine; and cold and wind and reek and dust, these things and the like to these every day are injurious to the eyes. For mistiness of eyes, take green fennel, put it into water for thirty days in a crock (earthen vessel), one that is pitched on the outside, fill it then with rain water; after that throw off the fennel and with the water every day wash the eyes and open them. Again, from the vapour and steam of ill juices and from nausea cometh mist of eyes, and the sharpness and corrupt humour causes that, against which this is to be done. For mist of eyes, take of celandine juice a spoon full, another of fennels, a third of southernwoods juice, and two spoon measures of the tear of honey (virgin honey that drops without pressure), mingle them together and then with a feather put some into the eyes in the morning and when it be midday, and again at evening after that, when it is dried up and spent; for sharpness of the salve, take milk of a woman who hath child, apply it to the eyes.

Again, a noble craft. Take equal quantities of balsam and of virgin honey, mix together and smear with that.

Again, for the same, juice of celandine and sea water; smear and bathe the eyes therewith. It is then most advisable that thou take juice of celandine and of mugwort and of rue, of all equal quantities, add honey to it, and balsam, if thou have it, put it then into such a vessel that thou may seethe it with glue (probably a covered vessel), and make use of it. It does much good.

For mist of eyes, salt burnt and rubbed fine and mixed with dumble dores honey; smear therewith.

Again, juice of fennel and of rose and of rue, and dumble dores honey, and kids gall, mixed together; smear the eyes with this. Again, lay upon the eyes green coriander rubbed fine and mixed with woman milk.

Again, let him take a hares gall and smear with it.

Again, live perriwinkles burnt to ashes; and let him mix the ashes with dumbledores honey.

Again, the fatty parts of all river fishes melted in the sun and mingled with honey; smear with that.

For mist of eyes, juice of betony beaten with its roots and wrung, and juice of yarrow and of celandine, equally much of all, mingle together, apply to the eye. Again, mingle pounded root of fennel with the purest honey, then seethe at a light fire cleverly to the thickness of honey. Then put it in a brazen ampulla, and when need be, smear with it, this driveth away the eye mists, though they be thick.

For mist of eyes again, wring out juice of celandine or of the blossoms of it, and mingle with dumbledores honey, put it in a brazen vessel, then make it luke-warm cleverly on warm gledes, or on ashes, till it be done. That is a unique medicine for dimness of eyes.

Some avail themselves of the juice singly, and anoint the eyes with that. For mist of eyes again; juice of ground ivy and juice of fennel; set equal quantities of both in an ampulla, then dry in the hot sun, and smear the inward part of the eyes with that. For mist of eyes again, smear earthgalls juice, that is herdwort, on the eyes, the vision will be by it sharper. If thou addest honey thereto, that is of good effect. Further take a good bundle of the same wort, introduce it into a jug full of wine, and seethe three days in a close vessel; and when it is sodden, wring out the wort, and drink of the ooze sweetened with honey every day, after a nights fasting, a bowl full.

The eyes of an old man are not sharp of sight; than (sic) shall he wake up his eyes with rubbings, with walkings, with ridings, either so that a man bear him or convey him in a wain. And they shall use little and careful meats, and comb their heads and drink wormwood before they take food. Then shall a salve be wrought for unsharpsighted eyes; take pepper and beat it, and beetle nut and a somewhat of salt and wine; that will be a good salve.

For much eye ache. Many a man hath mickle ache in his eyes. Work him then groundsel and bishopwort (betony) and fennel, boil all the worts in water, milk is better, make that throw up a reek on the eyes. Again, let him mingle with wine celandine and woodbines leaves and the herb cuckoosour (Oxalis Acetosella).

Again for much eye ache, pound in wine the nether part of cropleek (possibly Allium savativum) and the nether part of Wihtmars wort, (perhaps Cochlearia anglica), and let it stand for two days. For pearl, an eye salve; take ashes of broom and a bowl full of hot wine, pour this by a little at a time thrice on the hot ashes, and pour that then into a brass or a copper vessel, add somewhat of honey and mix together, apply to the infirm mans eyes, and again wash the eyes in a clean wyll (spring). For pearl on the eye, apply the gall of a hare, warm, for about two days, it flieth from the eyes. Against white spot, take an unripe sloe, and wring the juice of it through a cloth on the eye, soon, in three days the spot will disappear, if the sloe be green. Against white spot, mingle together vinegar and burnt salt (a substitute for sal ammoniacum) and barley meal, apply it to the eye, hold thine hand a long while on it.

For pearl, an eye salve; take seed of celandine or the root of it, rub it into old wine and into honey, add pepper, let it stand for a night by the fire, use it when thou wilt sleep. Against white spot, boil in butter the nether part of ox-slip (primula veris elatior) and alder (Alnus glutinosa) rind.

In case the eyes be tearful, juice of rue, and goats gall and dumbledores honey, of all equal quantities. If eyes be tearful, add to sweetened wine ashes of harts horn. Work an eye salve for a wen, take cropleek and garlic, of both equal quantities, pound them well together, take wine and bullocks gall, of both equal quantities, mix with the leek, put this then into a brazen vessel, let it stand nine days in the brass vessel, wring out through a cloth and clear it well, put it into a horn, and about night time apply it with a feather to the eye; the best leechdom.

For a wen on the eye, take hollow cress (gentiana campestris), roast it, apply it to the eye, as hot as possible. (N.B., Wisps or styes are still called wuns in Devonshire).

For eye ache, let him work for himself groundsel and bishopwort and beewort (Acorus calamus), and fennel, boil all the worts in water; milk is better.

For ache of eyes, take the red hove (Glechoma hederacea), boil it in sour beer or in sour ale, and bathe the eyes in the bath, the oftener the better.

For eye ache, take twigs of withewind (Convolvulus sepium), pound them, boil them in butter, apply them to the eyes.

Work an eye salve thus; take nut kernels and wheat grains, rub them together, add wine, strain through a cloth, then apply to the eyes. For acute pain and ache of eyes, mingle well crumbs of white bread and pepper and vinegar, lay this on a cloth, bind it on the eyes for a night. Thus shall a man work an eye salve, take the nether part of strawberry plants and pepper, pound them well, put them on a cloth, bind them fast, lay them in sweetened wine, make somebody drop one drop into the eyes. Work an eye salve thus; leaves of woodbind (Convolvulus), woodmarche (Apium graveolens), strawberry plants, southern wormwood (Artemisia abrotanon), green hellebore, celandine, pound the worts together much, mingle with wine, put in a copper vessel or keep in a brazen vat, let it stand seven days or more, wring the worts very clean, add pepper, and sweeten very lightly with honey, put subsequently into a horn, and with a feather put one drop into the eyes. Work an eye salve thus: take beetle nut (?) and sulfur, Greek olusatrum (Smyrnium olustratum) and burnt salt, and of pepper most, grind all to dust, sift through a cloth, put it on a fawns skin, let him keep it about himself, lest it get moist. Introduce a small quantity into the eyes with a tooth pick; afterwards let him rest himself and sleep, and then wash his eyes with clean water, and let him look in the water, that is keep his eyes open under water. Work eye salve thus; pound thoroughly cummin and a strawberry plant, and souse with sweetened wine, put into a copper vessel or into a brazen one, let it stand many nights, wring the wort through a cloth and clear the liquid thoroughly, then apply to the eyes when thou may wish to rest; if the salve be too biting, sweeten it with honey. For imminution of the eyes, take olusatrum, mingle with spittle, anoint the eyes outwardly not inwardly.

For imminutions, the nether part of the herb ashthroat (Verbena officinalis), chewed in the mouth and wrung through a cloth, and applied to the eye, wonderfully healeth. In case a man be blear eyed, take agrimony, boil it thoroughly down to the third part, wash the eyes frequently with that. For a pock or pustule in the eyes, take woad and ribwort (Plantago lanceolata), and brooklime (Vernica beccabunga), boil in milk, in butter is better, and work a fomentation. Boil brooklime and yarrow and wood chervil (Anthriscus silvestris) in milk.

For worms (nits) in eyes, take seed of henbane (Hyoscyamus niger), shed it on gledes, add two saucers full of water, set them on two sides of the man, and let him sit there over them, jerk the head hither and thither over the fire and the saucers also, then the worms shed themselves into the water. For "dry" disease in the eyes, which is called fig, and in Latin is called churosis (sycosis) the yolk of a hens egg and seed of marche (Apium) and olusatrum and garden mint. Again for fig, break to pieces a hock shank unsodden of a sheep, apply the marrow to the eyes. For thick eyelids, take three handfuls of mugwort, three of salt, three of soap, boil them till two parts out of the three of the ooze be boiled away, then preserve in a copper vessel. For him who hath thick eyelids, take a copper vessel, put therein cathartic seeds and salt there among, take celandine and bishopwort and cuckoosour and attorlothe and springwort (Euforbia lathyris) and English carrot, and a somewhat of radish, and ravens foot (Ranunculus ficaria), then wash them all, then pour wine on; let it stand, strain again into the copper vessel; then let it stand fifteen nights and the dregs will be good. Have with thee clean curds and introduce into the vessel on which the dregs are, as much of the curd as may cleave thereon. Then scrape the scrapings off the vessel, that will be a very good salve for the man who hath thick eyelids.

Bald's formularies for the eye end here. The following are taken from the third of the leech books mentioned above.

For swollen eyes, take a live crab, put his eyes out, and put him alive again into water, and put the eyes upon the neck of the man who hath need; he will soon be well. Work a good eye salve thus; take celandine and bishopwort, wormwood, woodmarche, leaves of woodbind; put equal quantities of all, pound them well, put them into honey, and into wine, and into a brazen vessel, or a copper one; put in of the wine two parts in three, and a third part of the honey, order it so that the liquor may just overrun the worts; let it stand for seven nights, and wrap it up with a piece of stuff; strain the drink through a clean cloth, put it again into that ilk vessel, use as occasion may be.

The man who putteth upon his eyes for about thirty nights, part of the suet of a fox, he will be for ever healthy.

If there be a mist before the eyes, take a childs urine and virgin honey, mingle together of both equal quantities, smear the eyes therewith on the inside.

Again, mingle together a crabs gall, and a salmons, and an eels, and field bees honey, smear the eyes inwardly with the salve.

Against a white spot in the eye; rub to dust burnt salt, and swails apple, and olusatrum, of all equal quantities, rub to dust, and put on the eyes, wash lightly with spring water, smear afterwards with womans milk.

If there are worms in the eyes, scarify the lids within, apply to the scarifications the juice of celandine; the worms will be dead and the eyes healthy. If flesh wax on eyes, wring wormwort into the eyes, till they are well.

If red sponges wax on the eyes, drop on them hot culvers blood, or swallows, or womans milk, till the sponges be got rid of. If the eyes are bleared, take dry rue and virgin honey, mingle together, let it stand for three nights, wring through a linen cloth, and afterwards apply to the eyes. Work a good dry salve for dim vision thus: take swails apple, and burnt salt, and pepper, and olusatrum, and *masfich; rub to dust, sift through a cloth, apply by little and little. Again, reduce* to dust mastich, and burnt oyster shell, and use as need be; either hath power to remove white spot from the eyes. Work a smooth eyesalve thus; take butter, boil in a pan, skim the foam off, and purify the butter in a dish; put the clear part into a pan; pound celandine and bishopwort, wood marche, boil thoroughly, strain through a cloth; use as need may be.

For imminutions, and for all pain of the eyes; chew wolfscomb, then wring the ooze through a purple cloth upon the eyes, at night, when the man has a mind *to rest, and in the morning apply the white of an egg.*

The contents of the third volume are of a more varied character than those of the earlier volumes. Various receipts are given, and a good deal of space is devoted to dreams, charms, and a glossary. There is a good deal of similarity about the receipts, and it seems best to abstract them, rather than to give them in full.

The following eye salves are vaunted. Rub up aloes into vinegar, smear the head therewith, and put it into the eyes. Put into a horn wine and pepper, and into the eyes when you wish to go to bed. Take the nether part of strawberry and pepper, put them into a cloth, lay them in sweetened wine, drop from the cloth a drop into either eye, if eyes are stopped up, take a crabs gall and white mint, wood lettuce and a salmons gall, collect them, drip into the eye through a coloured linen cloth and a little of the ooze of arum, then the eye recovers. The best eye salve is made with dumbledores honey, foxes grease, and a roebucks marrow, mingled together. For pock on the eye, take marrow, soap, and a hinds milk, mix, and whip up, let it stand till it be clear put the clear liquor into the eye; with God's help the pock shall go away. We are next given an all-in policy against eye wark, mist, wen, worms, itch, bleared eyes and all strange swellings. A goodly mixture of worts is boiled with harts marrow or grease, and of the result, a "good much" is put into the eyes and smeared on the outside, warm at the fire. If eyes are bleared, take green rue, pound it small and wash with dumbledores honey or with down honey, wring through a linen cloth on the eye as long as needful. Another receipt for pock in the eye is to take verdigris and a hinds milk, mix and whip up, let it stand till it be clear, then put of the clear stuff into the eye, and with God's help, etc. For an eye salve, take aloes and zedoary, laurel berries and pepper, shave them small, and lay fresh cows butter in water, then take a broad whetstone and rub the butter "on the whetstone with copper so that it may be pretty tough" then add some part of the worts thereto, and put the paste into a brass vessel, let it stand there for nine days and let someone turn it every day; afterwards melt it in the same brass vessel, strain through a cloth, then put it into whatever vessel thou wilt, use it when need be. This is good for all infirmities of the eyes. For sore of eyes sing this Latin prayer "Sana Domine, oculos, hominis istius——sicut sanasti oculos Tobiae sancti, et sicut aperuisti oculus duorum cecorum."

For blindness of the eyes. This shall avail for tenderness of the eyes, as Hippocrates the leech made it known, that is to say first that the sore cometh upon the eyes with much heat, as whiles it cometh on with moisture, so that they are swollen, and at whiles without soreness, so that they grow blind, and at whiles from the fluxes which run from the eyes. They must then be thus cured. If the disorder

cometh from dry heat, then take a cloth and dip it in water, and wash the eyes then put a cupping horn on the temples; and if they turn blind without any soreness, give satureia, savory, to drink, and he will be healed; and eftsoons if any thing touleth the eyes within, take mead or womans milk, and put it into the eyes.

For bleared eyes; work a poultice like a little cake with pounded leaves of verbena, and lay it on the eyes for a day and a night. Or make a poultice with olusatrum, honey and egg-white, mix and lay to the eyes. New cheese can be used in the same way.

This shall be for dimness of eyes, which the Greeks name glaucomata. Take three spoons of womans milk, and celandine, one spoon full, and aloes and crocus, saffron in French, and mix, and squeeze through a linen cloth, and then put the salve into the eye.

This shall be for tenderness for eyes, which are sores in the eye roots. Take myrtle berries and lay them in honey, and then take the berries and lay them to the eyes, that the eyes may swell; then take rue and pound it, and mix ashes therewith, and lay them to the eyes, at first it biteth them; swill the eyelids; and after that it cleverly healeth them.;

For those who cannot see from sunrise to sunset.

For nyctalopia, that is in our language, those who are able to see nothing after sunrise, till he again go to his setting. This then is the leechcraft which thereto belongeth. Take a knee cap of a buck, and roast it, and when the roast sweats, then take the sweat, and smear therewith the eyes, and after that let the blind eat the same roast; and then take a new asses tord, and squeeze it, and then let him take the ooze, and smear the eyes therewith and it will soon be better with them.

For stye. Take barley meal and knead it with honey, lay it to the eyes: this leechcraft has been tested by many men. Eftsoons, take bean meal and soap, mix, and lay to the eyes.

The dreams contain little of ophthalmic interest. To see oneself blind, betokens hindrance. To see onions betokens sore of eyes.

The last nostrum I propose to transcribe is as follows:—

This eye salve is good for annoyance of every sort in the eyes, for pin, and for web, for dimness, for wateriness, for insects and for dead flesh. Take a new crock; let it be set in the earth up to the brim, and these worts, minced very small be put into the crock, and on the top of these grout (?) or some liquid, that they may be thoroughly moistened; that is to say, bishopwort of two kinds, and glap, and ribwort and yarrow, and cinqfoil, daisey, and sinfull, and brown hove. After that let a brazen vessel, a dish, or bowl, be scoured in the lower part, till it quite shine; smear all the shining surface lightly with virgin honey. Then put this upon the crock, so that the vapour may strike upwards, then within three days wet thy finger with thy spittle and spatter the dish by little and little. And thence take a good eye salve.

Let virgin honey, and wine, and juice of rue be mixed together, and in equal quantities be put into a copper vessel, or a latten or a brazen one. Thence take a good eye salve.

It may be that the learned will scoff at these extracts from an Anglo-Saxon Leechbook; but I would ask any who are inclined to do so, to remember that we are dealing with the ophthalmology of more than nine hundred years ago. It is, to me, extraordinarily interesting to trace the immense antiquity of such procedures as keeping the eye open under water. It is quite possible that nine hundred years hence, our treatment of to-day will seem ludicrous to our ophthalmological descendants. I shall be glad of any suggestions as to the possible condition spoken of in those who see badly after the tenth hour of the day. The treatment outlined in volume III for those who are day-blind is exceedingly nasty. One wonders what virtue an ass's excrement possessed over that of any other quadruped.

WOUND-FIXATION, FOR INTRACAPSULAR EXTRACTION OF CATARACT

BY

ERNEST E. MADDOX

BOURNEMOUTH

HOWEVER satisfied we may be, and I think rightly, with the usual capsulotomy extraction for ordinary mature cataracts, occasions arise when an anti-needling operation is strongly indicated—as, for example, when a sticky, immature lens has a fellow eye previously lost by needling, or by irido-cyclitis accompanying prolonged absorption of cortex, or when a lens is too immature to make ordinary extraction the operation of choice, or when it is tremulous.

The valuable assistance I have received from the following simple expedient, not only in intracapsular extractions, but also

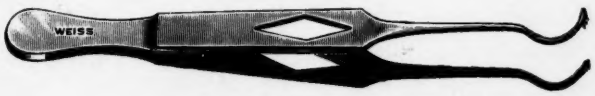


FIG. 1.

when stone deafness complicates the capsulotomy method, suggests that it may be worth communicating.

It consists, after the completion of a limbal incision, in gripping the extreme cut edge of the *conjunctiva* in the centre of the upper wound-lip with a fine pair of capsule forceps so curved as to allow easy exit of the lens (Fig. 1). The gentle grip thus secured not only affords excellent control of the eyeball, but counteracts that embarrassing tendency of the cornea to wander up under the lid, which (because it is not a voluntary motion) requires only a very gentle pull to prevent. The instrument, thus holding on to the upper lip of the wound, cannot slip into the eye, or invade the vitreous, yet it enables the upper wound-lip to be depressed and tucked under the emerging lens, and raised again as the equator of the lens passes out so as to bar the vitreous from following.

When the eye needs drawing down this "wound-fixation," as we might call it, has the advantage over the usual lower limbal one of closing the incision, rather than making it gape. With the ordinary capsulotomy operation, it is true, the advantage is trivial, if any; but it becomes of great importance with the larger section, and the feeble protection within the eye against vitreous presentation, characteristic of intracapsulars. This mode of control has, indeed, given me more satisfaction than the traction

thread, passed through the tendon of the superior rectus, of nearly fourteen years ago (*Trans. Ophthal. Soc., U.K.*, 1914).

I was a little apprehensive at first that the little traumatism of the conjunctival edge by the wound forceps might interfere with the healing of the incision, but that fear proved groundless, for the conjunctiva is so richly supplied with blood that it is extremely tolerant. I have sometimes, it is true, touched the spot with a fine brush moistened with tincture of iodine or with nitrate of silver, but the cases in which this was omitted did just as well. Should the fear of traumatism, however, act as a deterrent, a simple device described below will enable the wound to be avoided.

Almost the only disadvantage arises when we wish to make a long conjunctival flap, for in that case the edge of the conjunctiva is

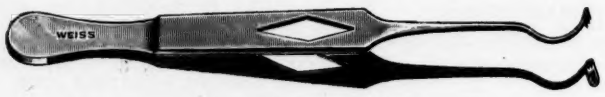


FIG. 2.

too far removed from the wound to be suitable for depression of the upper wound-lip under the lens. To meet this difficulty for which I have not yet had occasion, I have had another pair of forceps made (Fig. 2) with a small thin plate of metal attached to its lower foot, adjacent to the teeth, and standing out at right angles to the handle of the forceps so as to lie in apposition with the bared sclera as far as the upper edge of the wound. By tipping the handle forward, after the conjunctiva has been gripped 2 mm. or 3 mm. away from the wound, the plate can be inclined under the lens, the upper wound-lip being thus depressed as by an inclined plane. Should the fear of traumatism after a limbal incision without a flap make us still wish to keep at a respectful distance from the wound, the tongued forceps can easily be used to grasp the normal conjunctiva higher up, just far enough away to let the blade reach the wound. Should, moreover, any kind of tumbling operation be planned, the tip of the tongue can even lie inside the wound a little to assist in tilting the lens by depression of its upper edge. The figures represent the teeth and tongue as at the extremities of the forceps, but they should really be 2 mm. from the tips.

A CASE OF BILATERAL SPHENOIDAL EMPYEMA WITH MAINLY OCULAR MANIFESTATIONS

BY

D. STENHOUSE STEWART

HULL

E. B., a confectioner, aged 42, was seen by Mr. Cridland at Stafford on January 19, 1928, and was admitted under his care to the Wolverhampton and Midland Counties Eye Infirmary for complete investigation of possible causes of the serious reduction of visual acuity and defective colour vision which had gradually developed during the previous twelve months.

The patient had experienced severe frontal headaches since midsummer, 1927, and from September colours seemed darker and were misinterpreted, with resulting difficulty in performing his work which consisted mainly of applying coloured piping to iced cakes. He noticed particularly a blue veil over white and other light objects, and was thus unable to gauge the amount of blue to add to inferior icing sugar.

In December, 1926, he was dazed for some hours following unconsciousness from an accident, when an electric shock caused him to fall and strike his left temple and the back of his head.

The first pair of fields, for a 0.50 cm. white object was taken on January 21, 1928, when his central visual acuity was:—

0.D. = 6/18 partly; $\bar{c}$. + 0.25 D. sph. $\frown$ + 0.75 D. cyl. ax 50° = 6/18
0.S. = 6/18; $\bar{c}$. + 0.75 D. cyl. ax. vert. = 6/12 } = J.8.

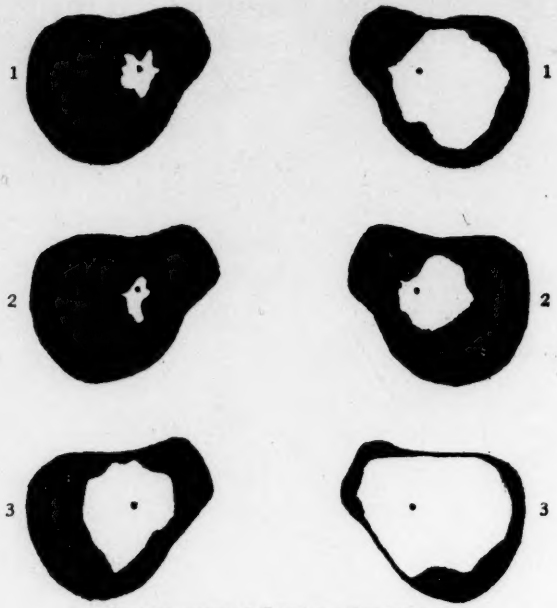
Under cycloplegia:—

0.D. = $\bar{c}$. + 0.75 D. sph. $\frown$ + 1.00 D. cyl. ax. 30° = 6/24.
0.S. = $\bar{c}$. + 1.25 D. sph. $\frown$ + 0.25 D. cyl. ax. vert. = 6/18.

Macular perception of coloured objects up to 1° visual angle in size was uncertain with the left eye, and definitely poor with the right. Red was described as dark chocolate, white as bluish white, blue as dark bluish, green as very dark blue, and yellow as dark salmon. It was evident that he mistrusted himself from past experience.

Beyond this, and his statement that, when he was reading, the word he was looking at sometimes seemed to fade out, no scotoma could ever be demarcated in this case, throughout which there were no ophthalmoscopic signs whatever; his blood Wassermann was negative, his urine was normal, and no other abnormality was detected in his central nervous system.

As he had a nasal discharge he was examined by Mr. A. Lowndes Yates, honorary rhinologist to the institution on January 26, and given treatment.



FIELDS FROM A CASE OF BILATERAL SPHENOIDAL EMPYEMA.

Central spot represents fixation point,
White area represents patient's visual field.
Black area represents amount by which patient's field is less than the normal.

The second fields were taken on January 28; his visual acuity had then declined to 6/24 each eye, uncorrected.

On February 3, Mr. Lowndes Yates explored his sphenoidal sinuses, and withdrew 3 c.c. of pus from the right side and 2 c.c. from the left.

Next day, vision had improved to 6/12 right, 6/18 left.

In the evening of February 6, the patient had a very severe headache followed by a sensation of swelling the next morning, and in the afternoon a feeling as if the swelling had burst. On the following day the third pair of fields was taken. Colour vision was normal for the smallest coloured objects. On February 10, his corrected macular visual acuity was:—

O.D. = $\bar{c}$. − 0.50 D. cyl. ax. 150° = 6/6
O.S. = $\bar{c}$. + 0.25 D. sph. ⌒ − 0.50 D. cyl. ax. 60° = 6/6
} = 6/5, and J.1. easily

Although the field contraction is a little unusual, and the boundaries of the relative scotoma could not be definitely mapped out, there seems adequate reason for this case to be regarded as one of

retro-bulbar neuritis directly due to a nasal sinus infection; the manner in which the conducting power of the optic nerve was inhibited, whether by toxins or otherwise, is not clear.

I acknowledge my indebtedness to Mr. Cridland for his permission to publish this case.

ANNOTATION

The Social Work of a large Hospital

There is a side of the work of a large hospital of which the surgeon sees little and the student practically nothing. It plays, nevertheless, a most important part in the successful treatment of many of their patients. The Lady Almoner, Miss. M. W. Edminson, has just issued a report on the work of the Samaritan Fund of the Royal London Ophthalmic Hospital. In this report a new departure is made to enable the reader to visualise by the aid of diagrams the nature of the disease, the assistance found necessary, and the institutions available for such assistance. As is to be expected in an ophthalmic hospital the most frequent recommendations are made to the M.A.B. Schools at White Oak, Swanley. Some of the facts relating to the group of children sent to Swanley have been collected and classified in the report for the years 1924 and 1925, when 50 children between the ages of 2 and 15 were transferred there.

"These children were suffering from phlyctenular ophthalmia, keratitis, blepharitis, interstitial keratitis (two cases) and trachoma (one case). The purpose of the investigation was to discover not only how many were, on their return, reported by the surgeon as free from all signs of active disease, but also how many had remained without relapse for at least a period of twelve months. The Hospital notes could not be taken as final evidence in concluding whether a relapse had occurred because it was possible that the ophthalmia had recurred without the child being brought again to Moorfields, or that the parent had taken him elsewhere for treatment. Each patient was therefore visited at home and the parents' co-operation was enlisted in discovering what had happened. The children, before being sent to Swanley, had suffered from eye disease for prolonged periods, only twelve out of the total having been affected for a period less than six months, and some had been attending as out-patients for several years. The average stay at White Oak was seven months." The final result was that 78 per cent. were sent home, not only cured but with their general health sufficiently established to preclude the chance of relapse. Such a result, only one of the many activities of this work, speaks for itself. The success of this work affords ample evidence of the advisability of providing even greater facilities for the treatment of this class of case.

ABSTRACTS

I.—LACRYMAL

(1) **Schall, Emil.—The pathological anatomy of stenosis of the naso-lacrymal duct. (Zur pathologischen Anatomie der Stenosen des Tränennasenkanals.)** *Zeitschr. f. Augenheilk.*, Bd. LX, S. 38, 1926.

(1) **Schall** complains that the treatment of dacryocystitis and occlusive conditions of the lacrymal passages is based almost entirely on the clinical condition and appearances, while very little attention is given to the pathological processes underlying them. He has, therefore, examined histologically twenty-two lacrymal sacs from deceased persons. These were removed *in toto* with the whole length of the ducts, and were subjected to serial sectioning over the whole of their extent. In twenty of these, that is, in 90 per cent., while the upper part of the duct was patent, he found that the lumen in the lower part was completely obliterated. Here was situated a solid plug of fibrous tissue, above which was granulation tissue. This gradually merged into a deformed duct, lined by epithelial cells showing various degrees of degenerative and inflammatory change. In the usual method of excising the sac this part of the canal is not examined, and hence in Schall's opinion the site of the most frequent obstruction has not hitherto been stressed. From his observations Schall concludes:

(1) That the infection giving rise to lacrymal inflammation and resulting ultimately in lacrymal obstruction is in the vast majority of cases an ascending one from the nasal cavity. The primary inflammation is in the duct; the sac is infected secondarily.

(2) That in the vast majority of cases treatment by the usual method of probing is unsound. In the cases examined the epithelium of the lower part of the duct had entirely disappeared, and probing, which could only result in the forcible tearing through of the plug of fibrous tissue, will rarely lead to the formation of an epithelialized passage, which alone can give promise of permanent patency.

W. S. DUKE-ELDER.

(2) **Dean (Council Bluffs, Iowa.)—Treatment of chronic Dacryocystitis.** *Trans. Amer. Acad. of Ophthal. and Oto-Laryngol.*, 1927.

(2) **Dean** comments on the well-known unsatisfactory state of our treatment of chronic dacryocystitis and gives his own method of treatment. For a successful result three postulates must be secured. First, free drainage of the sac; second, a sac rid of infection and granulations; third, puncta and canaliculi left in a

normal condition. His treatment is as follows. If fluid can be forced through the canaliculi by pressure over the sac, they are patent and need no attention. If they seem to be closed, a No. 4. Bowman probe is passed into the sac to make sure that there are no strictures; if proper care be exercised this does no damage.

Under local anaesthesia an incision is made below the tendo oculi into the sac, extending downwards for about 7 mm.; the sac is then anaesthetized by pushing into it and into the upper aperture of the nasal duct a small gauze wick damped with a 10 per cent. solution of cocaine and a drop of epinephrin. This is left in place for five to ten minutes and then removed; granulations, if any are present, are curetted, and the sac is wiped out with 2 per cent. solution of silver nitrate. The nasal duct is next dilated with large probes (Ziegler's Nos. 10, 12, 14, and 16) passed from the skin incision. Usually a No. 14 or No. 16 will pass easily, the diameters being 3.5 mm. and 4 mm. respectively. After dilatation, a silver wire style, 2.5 mm. in diameter, is passed into the canal, the upper end of the wire being bent forward to form an angle of about 45°, and a dressing is applied. Every other day the sac and canal are anaesthetized, the sac is treated through the incision, the canal is probed, and the style replaced. Four or five treatments usually suffice, and as soon as the sac is healthy the incision is allowed to close. "With a healthy sac and free drainage through the canal, no fistula will result." The author divides the Ziegler probes through the middle of their handles, so as to avoid the risk of the end not in use becoming contaminated.

R.R.J.

(3) **Asbury, Mary K. (Cincinnati).—Visualization of the lacrymal passages by the use of lipiodol.** *Trans. Amer. Acad. of Ophthal. and Oto-Laryngol*, 1927.

(3) Asbury briefly reviews the history of the use of opaque substances for this purpose from the year 1909. Earlier investigators used one or other of the following substances; bismuth in albolene; lead or bismuth in paraffin oil; and thorium in liquid paraffin. In 1921 Sicard and Forestier began using lipiodol in radiology. Lipiodol is an iodized vegetable oil (poppy oil) containing 40 per cent. iodine by weight. It is not a solution of iodine in oil, but a chemical combination which gives no reaction for iodine by the ordinary methods. In 1923 this substance was used by Bollock for the first time in radiography of the lacrymal passages. Lipiodol is unusually opaque to X-rays; it is homogeneous, and although a thick oil of high sp. gr. (1,350) it is sufficiently fluid at body temperature to flow into and out of the lacrymal duct. It can be warmed to increase its fluidity without damage. It need not be sterilized; it is fairly stable, but

it should not be subjected to high temperatures or to prolonged exposure to sun-light. It is non-irritating to mucous surfaces. The technique of its use is as follows. Both passages are injected for purposes of comparison. A drop of cocaine is instilled first, and the syringe is warmed so as to prevent the oil cooling when filled. Considerable pressure is needed to inject the oil through an aperture of such small calibre as the lacrymal nozzle. The oil is warmed by immersing the container in hot water for a few minutes; it must be a clear yellow. If cloudy or of a brown colour it must not be used as it then contains free iodine. 0.5 c.c., will more than fill an average duct; 0.2 c.c. will clearly outline a normal one. An excess does no harm; if it regurgitates into the conjunctival sac, it then outlines the canaliculi, their junction with the sac, and the palpebral fissure. Since lipiodol runs through the lacrymal canal very quickly X-ray pictures must be taken immediately after the injection. It is probably wise to express all purulent or mucoid contents of a mucocele by pressure and preliminary syringeing before injecting the lipiodol. The paper is illustrated by ten plates and contains a convenient bibliography. It provoked a good discussion which is also reported.

R.R.J.

(4) **Gérard, G, and Heurtaux (Lille).—Subconjunctival dacryops. (La grenouillette sous-conjonctivale.)** *La Clin. Ophtal.*, June, 1927.

(4) **Gérard** writes at considerable length on a case of dacryops and gives some of the literature. He says that his pupil Heurtaux in his thesis (probably based on this case) has only found 40 cases in the literature. Gérard gives a list of 27 authors who have written on the subject, including Lagrange's list of 22 cases. The reviewer in 1911 published an article on dacryops, written round a personal case, in which references were given to 23 authors. Of these 23 seven only appear in Gérard's list. Obviously, therefore, while dacryops is a rare condition, it is not so rare as Gérard considers it to be. The reviewer's article and that of Gérard are on very similar lines in that both give a general account of the condition while both give some of the literature. Anyone who chooses to read both these articles will have a fairly complete knowledge of the subject up to date. It may be mentioned that the description of the appearance involved in the word "grenouillette" is due, according to Gérard, to Lagrange who coined the name because of the resemblance of the subconjunctival cyst to the sublingual cyst known as ranula. The reviewer's article "On Dacryops" will be found in *The Ophthalmoscope* for 1911, page 396, and, as the principal facts are there easily accessible, Gérard's interesting account will not be further abstracted.

ERNEST THOMSON.

(5) ***Maghraby, Abdel Maksoud (Cairo).—Treatment of chronic*** **dacryocystitis with paraffin injection.** ***Bull. Ophthal. Soc., Egypt, 1927.***

(5) **Maghraby** states that the introduction of liquid paraffin into the lacrymal sac in a case of chronic dacryocystitis may facilitate treatment by syringeing and dilatation of the lacrymal duct. This is done for several days before probing is seriously begun.

A. F. MACCALLAN.

II.—GENERAL MEDICINE

(1) **Haworth, E., and Hill, N. Grey (London).—Observations on the blood calcium of children.** Metropolitan Asylums Board, Annual Report, 1926-1927 (Children's Section).

(1) This paper by **Haworth** and **Grey Hill** is of some interest to our readers in connection with a paper by D. J. Wood on calcium deficiency in the blood with reference to spring catarrh and malignant myopia (*Brit. Jl. of Ophthal.*, Vol. XI, p. 224). The research was undertaken to determine the normal calcium content in the blood of children, and also to investigate the statements that under certain conditions the amount of blood calcium is increased or decreased. The calcium was estimated by the whole-blood method described by Alport in the *Biochemical Journal*, Vol. XVIII, No. 2, 1924. They found that, during the period of growth no great change occurs in the calcium content; that the calcium content is slightly greater in males than in females; and that exposure to ultra-violet light does increase the calcium content, but only to a slight degree. So far as special diseases are concerned the figures are too small to enable the authors to make any very definite statements, but cases of surgical tuberculosis, with or without sinuses, and cases of chronic osteomyelitis show a tendency to have a low blood calcium, but there are some marked exceptions to this. Three tables of results accompany the paper. It is to be hoped that the authors may carry the research to some more definite results with a larger amount of material.

E.E.H.

(2) **Villard, H. (Montpellier).—Ocular complications of mumps. (Complications oculaires des Oreillons.)** *Arch. d'Ophtal.*, August, 1927.

(2) The rarity of ocular symptoms associated with mumps, and inquiries by some colleagues, led **Villard** to search medical literature for records. He found that in this respect ophthalmic literature exhibited *une très grande pauvreté.*

Lacrymal Apparatus.—Dacryo-adenitis, always bilateral, is the best known complication. Villard found some thirteen reports. In a few of these cases symmetrical inflammation of the lacrymal glands occurred, during an epidemic of mumps, in individuals who showed no enlargement of the parotid glands. Two cases of dacryo-cystitis are recorded; one slight, the other (reported by the author) acute and phlegmonous in character. In this latter case the lacrymal abscess was probably directly due to a purulent rhinitis, in itself a complication of the parotiditis.

Conjunctiva.—Acute conjunctivitis during and "dependent upon" an attack of mumps has been reported by seven or eight writers. These records are viewed with doubt by Villard who, noting that most of the observers report the absence of conjunctival discharge, inclines to the belief that they were in reality cases of dacryoadenitis, accompanied by conjunctival congestion.

Cornea.—Three authors only mention corneal lesions; in two instances ulcerative keratitis, in one keratitis of interstitial type.

Uveal Tract.—Two kinds of involvement are on record: (*a*) paresis or paralysis of accommodation; (*b*) iritis or irido-cyclitis. Villard gives brief notes of two cases of iritis and one of irido-cyclitis under his observation.

Retina.—The only case mentioned is one in which the retinal lesions cannot be justly attributed to parotitis.

Optic Nerve.—Optic nerve complications of mumps come next in frequency to those of the lacrymal gland. Two types have been reported: retrobulbar neuritis and neuroretinitis, the latter being the more frequent. In 1903 Antonelli referred to these optic nerve lesions in mumps in a report to the International Medical Congress on "Optic Neuritis in Acute Infections."

Recovery is the rule in the retrobulbar cases; it occurs also in a large proportion of the neuroretinitis cases.

The bibliography given by Villard (42 references) is probably complete and will prove useful to those interested in the subject.

J. B. LAWFORD.

(3) **Reimers, O. (Hamburg).—Uveo-parotid fever and its relation to tuberculosis. (Ueber einen Fall von Febris uveo-parotidea und über die Beziehungen zur Tuberkulose.)** *Zeitschr. f. Augenheilk.*, Bd. LX, S. 30, 1926.

(3) In 1909, Heerfordt described a clinical syndrome to which he applied the term uveo-parotid fever, characterized by a protracted and subacute inflammation of the parotid gland and the uveal tract, and frequently associated with paresis of the seventh nerve. Heerfordt considered the disease an atypical form of epidemic parotitis, and since the time of his publication several conflicting views have been put forward upon its aetiology. Reimers

describes in detail a typical case, the aetiological factor in which appears undoubtedly to be tuberculosis. The patient was a boy, aged 14 years, who developed bilateral indurative parotitis which was followed four weeks later by bilateral irido-cyclitis. The eye developed ciliary injection, keratic precipitates, posterior synechiae, a fibrinous deposit on the lens, and translucent vascularized nodules on the iris. The parotids were symmetrically enlarged and nodular, and microscopic examination of a piece of the tumour removed for diagnostic purposes showed typical tubercles surrounded by considerable connective tissue overgrowth. A skiagram showed the presence of numerous (tuberculous?) glands in the mediastinum. The von Pirquet reaction was strongly positive, and treatment by tuberculin induced rapid improvement. Reimers reviews the literature of associated cases, and concludes that the majority of them can well be explained on a tuberculous aetiology. The analogy to Mikulicz's disease is obvious, and some of these are undoubtedly tuberculous. He suggests that those cases of Mikulicz's disease which are tuberculous should be classed with "Heerfordt's disease" as being an expresssion of a comparatively benign cirrhotic form of tuberculosis.

W. S. DUKE-ELDER.

(4) **Terrien, F., Mawas, J., Veil, P. (Paris).—Incomplete forms of Recklinghausen's disease: palpebro-orbital neuro-gliomatosis. (Des formes frustes de la Maladie de Recklinghausen: la Neuro-gliomatose palpébro-orbitaire.)** *Arch. d'Ophtal.*, November, 1927.

(4) In addition to the classical cases of Recklinghausen's disease, familiar to ophthalmologists as plexiform neuroma affecting the eyelids, there are incomplete atypical forms, the true nature of which being unrecognized at times, they are diagnosed as congenital ptosis or diffuse fibroma of the eyelids. **Terrien, Mawas**, and **Veil** desire to direct attention to such cases.

Recklinghausen's syndrome described in 1882 consists essentially of the association of multiple cutaneous and subcutaneous tumours, abnormal pigmentation in the form of spots and patches, pigmented naevi or diffuse pigmentation, bony deformities and psychic defects. The variety known generally as plexiform neuroma occurs most frequently in the head, and may be localized in one or other eyelid and extend to the temporal region. The number of tumours is variable, and may reach a total of thirty or more: they have been found in nearly every tissue, and van der Hoeve has reported a growth in the retina.

In its incomplete form the disease may show only one characteristic symptom such as tumour development or pigmentation, although the cases beginning thus may pass to the complete

form. Acuna and Bazan were able to follow seven cases of which six showed only pigmentation, and one, tumours of the right hand: in three of these the clinical picture of the disease ultimately became complete. The incomplete examples, especially if affecting one eyelid, may easily be mistaken; hence the authors urge that in all cases of persistent tumefaction of the eyelids a careful search should be made for pigment spots all over the body.

The writers report three examples of incomplete forms of Recklinghausen's disease in young females: in all three the prominent manifestation was a tumour in the eyelid of one side, but examination revealed disseminated patches of pigmentation on the trunk, and one patient was much below the average in intelligence.

In these cases the cutaneous pigmentation was congenital: the palpebral hypertrophy was noted during the early years of infancy. The tumour involved the whole thickness of the affected eyelid and extended into the orbital cavity; the orbit showed an increase in area in the X-ray photographs.

Treatment by radium and by X-rays was quite ineffectual; in one case surgical measures were adopted with considerable improvement cosmetically. Photographs of two of the children and of the excised portion of the tumour are given.

J. B. LAWFORD.

(5) **Veil, Prosper (Paris).—A new case of the incomplete form of Recklinghausen's disease presenting a palpebro-orbital manifestation. (Un nouveau cas de forme fruste de maladie de Recklinghausen à manifestation palpébro-orbitaire.)** *La Clin. Ophtal.*, January, 1928.

(5) Recklinghausen's disease is probably sufficiently rare to warrant an abridged translation of **Veil's** article. After referring to the case reported by himself to the Paris Ophthalmological Society in 1925, and to another case in collaboration with Terrien and Mawas similarly reported in 1927 (*v. supra*), the author relates the following case. "Mlle. Andrée R., aged 10 years, was brought to the Fondation Rothschild under Rochon-Duvigneaud because the left upper lid, which was larger than that of the right eye, covered more of the cornea. The skin of the lid was unaltered. The upper palpebro-orbital furrow had disappeared. On palpation a thickening of the tissues of the lid was found. Having a fibrous consistence, without any edge (*sans aucun cordon*) this new formation was situated entirely in the upper part of the lid along the upper orbital arch. The globe was in its normal position; upward movement was slightly diminished and took place upwards and inwards. Pupil and fundus normal. Visual acuity 1. The child was undressed and it was found that all over the body there were numerous *café au-lait* stains of various sizes and situated

principally on the skin of the thorax and abdomen before and behind. Further, there was marked hypertrophy of the left labium majus, which hypertrophy extended along the perineum to the left buttock, which was itself lowered and asymmetrical. There were no cutaneous tumours, no tumours of the peripheral nerves, nor any deformation of bones." Slight thyroidal insufficiency and slight suprarenal overactivity were found. Blood Wassermann was negative. The child had been born at term and had had various childish maladies, measles, mumps, chicken-pox, whooping cough, and had not yet menstruated. The pigmentation had always been present. Mother hunchbacked, father dead of tubercle of lungs. The author then goes on to say "the hypertrophy of the eyelid and of the labium majus represent localizations of Recklinghausen's disease of which diffuse cutaneous pigmentation is one of the most characteristic manifestations. We know, too, that Recklinghausen's disease, in addition to the complete classical type, takes on monosymptomatic forms, perhaps a tumour, or pigmentation alone, and that the affection may ultimately become complete, there being transitions between these forms and the complete type. Further, in order not to miss the point, we should in every case of palpebral swelling look for the least trace of cutaneous pigmentation."

A front view of the child shows very well the swelling at the vulva, less well that of the lid.

ERNEST THOMSON.

(6) **Brown, Albert L. (Cincinnati).—Ocular findings in Addison's disease.** *Amer. Jl. of Ophthal.*, June, 1926.

(6) **Brown's** paper concerns the ocular findings in a case of severe Addison's disease occurring in a man, aged 35 years, who died 72 hours after admission to hospital. A dark line was present just above the ciliary border of each upper lid, and there were some spots of pigment near the limbus. The discs showed slight temporal pallor, the arteries being small in calibre but the veins large. Around each macula was a grey homogeneous deposit of pigment which faded into the surrounding retina in the left eye, but joined a streak of lighter pigment toward the disc in the right eye. The pupils were large, about 5.5 mm. and reacted to light, but only down to 3.5 mm. This indicated the increased sympathetic irritability which is a feature of the disease. The vascular changes were due to the low blood pressure (70 mm. Hg) allowing the arterial walls to contract. The localization of pigment in the macular regions seemed to the author analogous with the fact that cutaneous pigmentation is greater on exposed surfaces, since the maculae are subjected to a greater concentration of light than other parts of the fundi.

F. A. WILLIAMSON-NOBLE.

(7) **Barlow, Dr. A. (Philadelphia).—Fundus changes in hypertension with and without nephritis.** *Arch. of Ophthal.*, July, 1927.

(7) **Barlow's** paper provides a useful summary of the conflicting ideas of various workers on this subject. The first part of the paper concerns the genesis of hypertension "a condition characterized by persistent elevation of blood pressure of undetermined origin with little or no reduction in kidney function . . . ., and in which, as a result of prolonged hypertension, the kidney becomes secondarily involved." According to Kahler and Sallman, the condition is due to stimulation of the vasomotor nervous system. The stimulus may affect the vasomotor centre and be due to toxic, vascular (cerebral arterio-sclerosis) or reflex causes or it may affect only the vasomotor nerve endings of the peripheral vessels. In support of the vascular theory, Anrep and Starling have found that a relative anaemia of the vasomotor centres causes a compensatory rise in systemic blood pressure, while Bordley and Baker have found arterio-sclerosis constantly present in the medulla of hyperpietic subjects and absent in patients with normal blood pressure. The primary cause of the medullary change is of course undetermined. With regard to the relative importance of retinal and peripheral arterio-sclerosis, O'Hara and Walker found a constant association between retinal changes and hypertension, but had cases with peripheral arterio-sclerosis and no hypertension; so that sclerosis of the small vessels is an essential factor in the production of this condition. Following Wagener, the author divides the retinal changes into four groups: (1) "Arterio-sclerosis of the hypertension type and haemorrhages without actual retinitis." Such cases are thought to be due merely to the local vessel changes; (2) arterio-sclerotic retinitis, with haemorrhages and small bright spots, probably the result of severe endarteritis; (3) " retinitis of hypertension plus nephritis." Here there may be only a moderate degree of arterio-sclerosis, but there are also cotton wool patches, haemorrhages and some oedema of the disc, caused by a toxin more powerful than that which has been concerned in the slow production of arterio-sclerosis; (4) retinitis of nephritis—the classical albuminuric type of change, where the toxin is more potent still. The main distinction between groups 2 and 3 lies in the degree of sclerosis of the vessels; otherwise the appearances are somewhat similar. Though this classification is admirable, not all cases can be made to fit into it. Thus cases of the typical albuminuric variety have been described in which the renal function has been adequate and the only abnormality present has been hypertension. Many theories have been put forward to account for the fundus changes in renal retinitis. Thus Rochon-Duvigneaud attributes them to retention

of urea or some substance intimately related to it. Barlow notes, however, that the retinal changes can occur without urea-nitrogen retention. Schieck and Volhard put the changes down entirely to rise in blood pressure, "the origin of which is still entirely concealed in darkness." Arterial constriction occurs, causing a relative ischaemia of the retina and kidneys, which in the retina produces the typical changes. On the other hand, retinitis has been observed in cases with little or no hypertension and *per contra,* retinitis is often absent though the blood pressure is raised. Kahler and Sallman get over this difficulty by stating that fundus changes in hypertension and nephritis occur only when the rise in blood pressure is due to stimulation of the vasomotor centre and are never found in association with peripheral hypertension. Martin Cohen maintains that the cause of the retinitis is primarily arterio-sclerosis, since even those cases which show no changes ophthalmoscopically are found to have arterio-sclerosis on microscopic examination, though it might be only the choroid which was affected. Finally, Batty Shaw is quoted to the effect that arterio-sclerosis is a first effect, and arterio-sclerotic retinitis a later one, of a toxaemia which acts slowly and in minimal quantities, but that when the toxaemia acts quickly or in accumulated large bulk, the changes of renal retinitis are produced.

F. A. WILLIAMSON-NOBLE.

(8) **Ramsay. A. Maitland (St. Andrews).—The early symptoms of disease with special reference to the eye.** *Lancet,* October 1, 1927.

(8) **Ramsay's** article represents an address at the opening of a post-graduate course at the James Mackenzie Institute for Clinical Research, St. Andrews. It deals in a useful manner with symptoms and the value of their proper appreciation. The symptoms considered are mainly those due to alterations of the light sense and of the colour sense, and such symptoms as metamorphopsia, muscae volitantes, monocular polyopia, flashes of light, dazzling and so on. The following will serve as an example: "I remember an artist whose sight was beginning to fail. He had been famous for the brilliant colouring of his pictures, but at this period his friends could not understand how it was that the reds and greens were completely overshadowed by a predominance of blue in everything he painted. It is interesting that this peculiar colour defect is very often associated with the presence of oxalate of lime crystals in the urine—one of the most reliable signs of disordered metabolism."

ERNEST THOMSON.

(9) **di Marzio, Quirino (Rome).—Sudden blindness from serous meningitis. (Cecità istantanea da meningite serosa.)** *Riv. oto-neuro-oftal.*, Vol. III, 1926.

(9) **di Marzio** describes three cases of sudden blindness from serous meningitis, a far rarer cause than cerebro-spinal meningitis.

After the careful review of the literature which is characteristic of Italian writers, the author describes his cases in detail, illustrating them with charts of the visual fields and skiagrams of gas-injected ventricles. The cases are of sufficient interest to warrant description in some detail.

The first case was that of a girl, aged 10 years, who was seen a fortnight after the onset of a febrile attack which lasted six days. During the fever the left eye became blind in three days. After this the right eye became blind in one day. From the onset there was temporal headache, but no vomiting. The fundi showed papilloedema of both discs. There were present slight weakness of right lower limb, and slight increase of left knee and Achilles jerks. Wassermann reaction in the blood at first was positive, later negative. Lumbar puncture was performed. The spinal fluid was under increased pressure, Wassermann reaction negative. No lymphocytosis. The next day the patient had perception of light. A week later the vision was R.V. fingers at 30 cm.; L.V. hand movements; in both eyes to the right only. The fields of vision showed right homonymous hemianopia. The second lumbar puncture was performed twelve days after the first. Fluid was still under pressure. Three days later V.=1/50 in both eyes. Fields showed relative homonymous right hemianopia. A third lumbar puncture was made 23 days after the first, and four days later the vision was 1/10 in each eye. The fields of vision now showed relative *bitemporal* hemianopia. Discs were becoming pale. Two further lumbar punctures were made, the fifth four months after the beginning of the illness. After this the vision was 9/10 in each eye. The fields showed bitemporal hemianopia for colours, not involving the fixation points.

The change in the visual fields is explained by the author by assuming that the greatest pressure was first exercised by the distended lateral ventricles on the optic tracts, and later by the third ventricle on the crossing fibres in the chiasma.

The second case was that of a man, aged 63 years, who twelve years before lost the sight of the right eye in a week; the eye had remained blind. A month before coming to hospital he had a stroke, with loss of consciousness and general convulsions. Twenty days after the stroke the left eye failed, and became blind in two days. On examination there was complete blindness and mydriasis. Right disc showed optic nerve atrophy with very small arteries; left disc oedematous, veins turgid. The Wasser-

mann reaction in blood was negative. Lumbar puncture was performed; fluid under increased pressure, albumen 0.2 per cent., otherwise normal, Wassermann reaction negative. Ventriculography, after injection of oxygen, showed enlargement of both lateral ventricles, the left being the larger, also enlargement of the aqueduct of Sylvius. There was no return of vision, and the left disc rapidly became atrophic, with narrowing of the arteries.

The third case was that of a woman, aged 37 years, who lost the sight of the left eye suddenly twelve years before, and whose right eye became suddenly blind eight days before she was seen by di Marzio.

On examination, R.V. no perception of light; L.V. fingers at 50 cm. in the outer part of the field. Right fundus showed pallor and slight swelling of the disc, with surrounding retinal oedema; retinal veins turgid, arteries very narrow. Left fundus showed white atrophy of the disc, with very narrow retinal arteries. Left knee and ankle jerks were increased. Wassermann reaction was negative, after provocation. Lumbar puncture was performed; fluid under increased pressure, albumen 0.1 per cent., Wassermann reaction was negative. Two further lumbar punctures were made. The R.V. improved to 5/10, and the field of the right eye returned, *though showing slight concentric contraction.* A diagnosis of serous meningitis, rather than embolism of the central artery, was made from the fundus appearance, the rapidity of the appearance of disc pallor, the increased pressure of the cerebro-spinal fluid, and the rapid improvement of vision after lumbar puncture.

ARTHUR GRIFFITH.

(10) **Brown, Albert L. (Cincinnati).—The ocular fundus in the acute toxaemias.**—*Jl. Amer. Med. Assoc.*, July 16, 1927.

(10) This is an analysis of the fundus conditions found in 850 cases taken from a general medical department and not from an eye clinic. Fifty-two per cent. of the patients presented abnormal fundus conditions which were considered to be dependent on some constitutional condition. Forty-four per cent. were considered to be dependent on the acute toxic processes for which the patients were then being treated. *The lesions reported exclude all thought to be due to retinal arterio-sclerosis, or renal or diabetic disease.*

Brown groups the general manifestations into three classes:

(1) Toxaemias of mild intensity and short course: (*a*) discs normal or slightly hyperaemic, with vessels, especially the veins, slightly dilated. Associated chiefly with influenza and acute rhinitis. (*b*) Average temperature 100° F. (*c*) Average duration from four to five days. It is to be noted that hyperaemia was

called such only when the discs became less involved as the patient recovered.

(2) Toxaemias of moderate severity and longer course: (*a*) discs rather hyperaemic, margins occasionally blurred; vessels definitely dilated, and often slightly tortuous. Associated with pneumonia, severe acute polyarthritis, typhoid, cerebro-spinal meningitis, etc. (*b*) Average temperature from 102° F. to 103° F. (*c*) Average duration from one to eight weeks, and occasionally death.

(3) Toxaemias of great severity: discs with margins blurred, with oedema, and vessels dilated. Surface of discs often fades insensibly into surrounding retina. White streaks show line of nerve fibre bundles. Occasionally retinal oedema; punctate haemorrhages from the finer vessels into the retina. Occasionally oedema of the disc was seen as a forerunner of definite optic neuritis.

The author believes that the majority of these manifestations were due to local dilatation with increased permeability of the blood-vessels and exudation into the surrounding tissues. He also says that the cases must be observed daily with the ophthalmoscope throughout the illness if the finer changes are to be seen, as they may be transient.

A. F. MACCALLAN.

(11) **Cushing, Harvey (Boston). — Experiences with orbito-ethmoidal osteomata having intracranial complications.** *Surgery, Gynaecology and Obstetrics*, June, 1927.

(11) This highly important paper by **Cushing** should be studied by every surgeon who is called upon to operate for the condition which is loosely called osteoma of the orbit. First because if the condition is one of osteoma it rarely arises in the orbit originally, and secondly so that the surgeon may be aware of the magnitude of the operation which may be required, and which is likely to demand a practical experience of intracranial surgery possessed by few, if any, ophthalmic surgeons.

Cushing's paper is devoted to the consideration of four cases of pedunculated osteoma of the ethmoidal cells which had secondarily invaded the orbit. The author states that until three years ago he was entirely unfamiliar with this lesion. All four examples were in men, three of whom had the scar of a frontal scalp wound received some years previously. Three of the patients sought hospital care because of intracranial symptoms which were unusual and difficult to explain. From lack of knowledge concerning the actual relation of the osteoma to the intracranial symptoms the first two of the patients succumbed, both of whom

might have been saved by the addition of a single modification in the operation.

In the future Cushing proposes to operate on and remove ethmoidal osteomata as soon as they are detected by X-rays. If they are neglected not only may the more familiar intra-orbital complication arise, but hitherto little understood intracranial ones. In this small series alone a cerebro-spinal rhinorrhoea communicating with the cerebral ventricles, a huge intracerebral pneumatocele and an intradural mucocele have all been observed. The field has been left apparently to the ophthalmologist, but the usual method of approach favoured by ophthalmic surgeons is an awkward one, and they have usually contented themselves with chiselling off as far as possible the intra-orbital portion of the growth, a procedure doubly difficult on account of the eburnated character of the growth and its inaccessibility when approached from the front. Neither nasal nor orbital route makes allowance for the possibility that the tumour may have extended into the intracranial cavity.

A. F. MACCALLAN.

(12) **Terson, A.—Section of the levator palpebrae in extreme cases of exophthalmic goitre. (La section du releveur palpébral dans les exophtalmies excessives.)** *Ann. d'Ocul.*, Vol. CLXIII, p. 321, 1926.

(12) **Terson** claims that disasters to the cornea in extreme cases of exophthalmic goitre would generally be avoided if half measures alone were not adopted. Tarsorrhaphy is essential, but is not satisfactory, lasting, or without danger unless the lids remain in contact without pressure.

He advocates what he points out has already been recommended for certain cases of extreme exophthalmos by other writers in the past, namely division of the levator palpebrae. In cases of moderate severity lengthening of the tendon may be performed. The section can be carried out by the conjunctival route by full eversion of the conjunctiva of the upper fornix with the assistance of his "propulseur" of the cul-de-sac. The cutaneous route, however, has the advantage that in addition to the main tendon, the muscle of Müller and the expansions of the levator to the skin can be divided. In every case it is essential to render possible a good tarsorrhaphy. A relative ptosis is better, he states, than loss of vision. Such a ptosis may at least be remedied later. In cases of marked exophthalmos there is usually a small amount of permanent proptosis even though the other symptoms of the disease disappear. This fact usually prevents ultimate ptosis.

HUMPHREY NEAME.

(13) **Luedde (St. Louis).—Conditions of the eyeball arising from retro-pharyngeal disease.** *Surgery, Gynaecology and Obstetrics*, June, 1927.

(13) **Luedde** points out that no ocular structure is immune to pathological changes arising in the nasopharynx. Hence we may have various forms of keratitis, iritis, cyclitis, circumscribed or disseminated choroiditis, cataract, retinitis, thrombosis, optic neuritis, toxic optic atrophy, in any or all of which aetiological investigation may lead to the nasopharynx as the cause of the condition. Conditions in the nasopharynx seem to have more than a casual relation to the three great bugbears of ophthalmology —glaucoma, retinal detachment, and sympathetic ophthalmitis. There is no special type in these inflammations which positively identifies them as due to nasopharyngeal disease. The inflammations may arise as the result of direct bacterial infection of the eye by the fingers or handkerchief, by extension *viâ* the nasal duct, by direct infection of the orbital cavity, by metastasis or bacteria *viâ* the blood stream or lymphatics, or by the absorption of toxins manufactured on the nasopharyngeal mucous membrane.

Where retropharyngeal disease (infected tonsils, mucous membrane, or paranasal sinuses) is the original cause of ocular inflammation treatment of such disease should be applied as early as possible. Putting out the original fire in a general conflagration may appear to be of little help sometimes, but should certainly be attempted.

A. F. MACCALLAN.

(14) **Tinel, J.—The ocular crises of encephalitis (lethargica). (Les crises oculaires des encéphalitiques.)** *La Clin. Ophtal.*, August, 1927.

(14) It will be noticed that the English title of this paper is not an exact translation of the original title. **Tinel** is referring to encephalitis lethargica although the word lethargic does not appear in the title. The article is taken from *La Pratique médicale française* for June, 1927, and is mainly or more particularly of interest to the physician. One cannot well abstract strings of signs and symptoms and therefore the author's opening explanatory paragraph only will be quoted. "Encephalitis lethargica brings us something new every year, and among the most curious and instructive of its manifestations are paroxysmal affections of the eyes or eyelids, which take the form of blepharospasm or tonic spasm of the ocular musculature. These manifestations, by their paradoxical course (*allure*), their intermittent nature, their manifest provocation by emotion or suggestion and their possible disappearance by effort of will or suggestion, necessarily must be placed in the category of neuropathic affections. They are

manifestly *hysteriform* although there can be no doubt as to their organic nature, and this unexpected conjunction raises anew in a very striking way the whole problem of neuropathic affections and their possible physiological substratum."

Those who wish to make themselves acquainted with the very numerous types of ocular and palpebral crises cannot do better than refer to Tinel's article.

ERNEST THOMSON.

III.—DISEASE OF CORNEA

(1) **Browning, S. H.—Bacteriology of hypopyon ulcer.** *Trans. Ophthal. Soc. U.K.*, 1927.

(1) **Browning** has always found the pus sterile in these cases. The organism most frequently associated with hypopyon ulcer is the pneumococcus, which is almost always found in cases of true ulcus serpens. Some damage must be done to the surface of the cornea before the pneumococcus can become established: few, if any, ulcers are infected at the time of injury by the body causing the injury; the infection takes place from pneumococci already in the conjunctival sac. It is rare, however, to get ulcers in cases of acute pneumococcal conjunctivitis. The Morax-Axenfeld diplobacillus is more often the cause of hypopyon ulcer than is generally suspected, though Browning does not agree with Axenfeld's figure of 31 per cent. He considers that the bacillus pyocyaneus causes some of the most virulent cases of hypopyon ulcer, and is, in fact, the most virulent organism that can affect the eye.

As regards treatment of hypopyon ulcers by vaccines or serums, generally or locally, he had not had any great successes, except in the treatment of gonococcal infections in the adult. He suggests the possibility of increasing the dose of hexamine in the magnesium sulphate and hexamine treatment of hypopyon ulcer, by using Hurst's method of administering the hexamine (*Lancet*, May 22, 1926).

G. G. PENMAN.

(2) **Clegg, J. Gray.—Aetiology and treatment of hypopyon ulcer.** *Trans. Ophthal. Soc. U.K.*, 1927.

(2) **Clegg** finds that 4 per cent. of his out-patients and 0.24 per cent. of his in-patients suffered from this condition. 20 per cent. of those affected were miners. The majority were in poor general health. The most frequent causative organism was the pneumococcus. He gives a list of the various methods of treatment which have been employed, for general and local use, and for combating complications. He summarises as follows—the logical and scientific methods of treatment, therefore, are:

A. *Prophylactic.* Maintenance of good robust health. Avoidance of risk of damage by flying particles by means of goggles, etc. Treatment of conjunctivitis and lacrymal obstruction. Early resort to treatment after injury.

B. *When an ulcer has formed,* more attention should be paid to building up the general resisting power of the body by food, drugs, purgatives, and rest. Early determination of the nature of the active organism is important. Measures should be taken to increase local resistance and to remove the infecting discharges, thus preventing re-infection of the corneal substance once treatment has started.

G. G. PENMAN.

(3) **MacCallan, A. F.—Aetiology and treatment of hypopyon keratitis.** *Trans. Ophthal. Soc. U.K.*, 1927.

(3) **MacCallan** believes that the relation between dental sepsis and hypopyon ulcer is very close. The eye may be harmed in two ways; either by toxin products or actual organisms being carried in the blood-streams to the eye, or by direct access of organisms *via* the pharynx or nose and lacrymal passages to the conjunctival sac.

He enunciates the following principles of treatment:—Removal or mitigation of septic foci, especially teeth; leaving the eyelids open and not applying fomentations or dressings; daily painting of the conjunctiva with silver nitrate, 2 per cent.; bathing of the lids by the patient himself, to be carried out frequently during waking hours; scraping away necrotic tissue with a sharp spoon where the ulcer is not deep, and performance of a Saemisch section in the more severe cases; the use of atropine only to prevent pain; paracentesis in cases where the ulcer is of only moderate extent; cauterization or carbolization only in specially selected cases; use of some zinc compound in all cases; application of natural or artificial sunlight; chauffage of various kinds; and treatment of dacrocystitis, if present.

G. G. PENMAN.

(4) **McMullen, W. H.—Treatment of hypopyon ulcer.** *Trans. Ophthal. Soc. U.K.*, 1927.

(4) **McMullen** believes that hypopyon ulcer is decidedly less common than it was 25 years ago, and finds this is supported to a certain extent by statistics. It is a preventable disease, and prophylaxis, by treatment of dacryocystitis and prevention of injuries to the cornea, is of the first importance. The condition is very rarely seen in well-to-do patients, as they do not neglect to come for treatment early. The author is convinced that the galvano-cautery is more effective than carbolic acid; he uses it at a

very dull red heat, thoroughly cauterizing the infiltrated advancing edge of the ulcer, and applying it more lightly in other parts. For irrigation, he has now given up mercury perchloride in favour of a hypertonic solution of magnesium sulphate, as recommended by Kirkpatrick, a half-saturated solution being used with an eye-bath every two or three hours. He prefers not to bandage these eyes, on account of the warmth and immobility resulting from bandaging favouring bacterial growth. As regards operative treatment, he considers a Saemisch section as a valuable conservative method of treatment, which should not be delayed too long, and considers it as more effective than a peripheral paracentesis. He has had purely negative results with protein shock treatment.

G. G. PENMAN.

(5) **Hudson, A. C.—Operative treatment of hypopyon ulcer.** *Trans. Ophthal. Soc. U.K.*, 1927.

(5) **Hudson** regards any considerable increase in intra-ocular pressure as an urgent indication for operation designed to effect its reduction, because of the rapid advance of the destructive process in the presence of this complication. He favours the so-called Saemisch section, as being much more efficient than a peripheral paracentesis, where the incision is of a more or less valvular character, and is likely to become closed within a few hours. He has never seen sympathetic inflammation as a sequel of the operation.

He quotes a series of 53 eyes, his own cases, in one-third of which no operation was performed, in one-half Saemisch section was performed, sometimes after paracentesis, and in one-sixth paracentesis only was done. Of these cases, those with Saemisch section showed visual results little inferior to those recovering without operation, and much superior to those treated by paracentesis. The percentage of eyes lost was least in the Saemisch section cases, and most in the paracentesis cases (three times as great as in the Saemisch section cases).

When healing occurs with adhesion of the iris to the scar, he performs an iridotomy with a Graefe knife introduced at the limbus and made to cut across the synechia from centre to periphery.

G. G. PENMAN.

(6) **Green, Dr. J. (St. Louis).—Conjunctivo-plasty in certain corneal affections.** *Trans. Amer. Ophthal. Soc.*, Vol. XXV. 1927.

(6) **Green** records examples of cases of corneal disease in which the use of a conjunctival flap has proved of great value. The cases illustrated are: marginal ulcer; inveterate pannus after the subsidence of acute trachoma; serpiginous ulcer; hernia of

Descemet's membrane following perforation of a serpiginous ulcer; perforation of the cornea following central syphilitic keratitis; ulcer of the Mooren type; ring ulcer of the cornea. In all results were obtained superior to those that follow the usual lines of treatment.

In the subsequent discussion Greenwood said that he had found a conjunctival flap of great service in ulceration following extreme exophthalmos. de Schweinitz said that while he had found the flap of service in some cases it had proved of no use in genuine cases of Mooren's ulcer. Verhoeff found a flap of use in keratitis following removal of the Gasserian ganglion. Such a flap should be left in position until the lacrymal secretion was restored; it could then be easily lifted off leaving a clear cornea beneath.

F. A. WILLIAMSON-NOBLE.

(7) **Piotrowski, G., and Frydmann. Mlle. (Geneva).—A case of ulcer of the cornea due to the bacillus of Petit.** (**Un cas d'ulcère de la cornée à bacillus de Petit.**) *Rev. gén. d'Ophtal.*, June, 1927.

(7) "The biological relations between the bacillus of Petit and the diplobacillus of Morax have not been absolutely determined: it is certain that from the biological point of view the diplobacillus has not the property of liquefying gelatine and that the bacillus of Petit may lose this property." So say **Piotrowski** and **Frydmann** in this article. In a general way the bacillus liquefaciens of Petit is rather rare, but the figures given by various authors vary greatly. The case reported is that of a man of 47 years who entered hospital with a corneal ulcer and hypopyon which had the appearance of a pneumococcal ulcer. Examination of smears showed numerous Gram negative diplo-bacilli but, apparently, no pneumococci. On further examination the organism turned out to be the Petit bacillus and treatment with sulphate of zinc caused rapid amelioration. The moral which is indicated by the authors, that the flora from the surface of the ulcer should be examined in such cases, is fairly obvious.

ERNEST THOMSON.

(8) **Riad, M. (Cairo).—Corneal infiltrations.** *Bull. Ophthal. Soc., Egypt*, 1927.

(8) Corneal infiltrations may be observed in some cases of trachoma as grayish elevations the size of a pin's head on any part of the cornea. They are very superficial. They break down, and small ulcers are formed which in favourable cases heal up leaving no opacity. Generally one or two of these infiltrations appear at a

time. They are usually associated with the presence in the body of a focus of sepsis, this may be in the teeth, tonsils, alimentary tract, etc.

A. F. MACCALLAN.

(9) **Gifford, Sandford R., and Steinberg, A. (Omaha, Nebraska).—Gold and silver impregnation of cornea for cosmetic purposes.** *Amer. Jl. of Ophthal.*, April, 1927.

(9) **Gifford** and **Steinberg** give a useful résumé of work done by others in this field and then go on to describe their own experiments which were performed on rabbits. The first method was to infect the rabbit's cornea with herpes virus but this was not satisfactory because even after the keratitis had run its course, the procedure of staining seemed to light it up, and the reaction produced caused disappearance of the stain. Small pox inoculations were better, but the best scars were obtained by application of trichloracetic acid. The solution used for staining was gold chloride, in strengths of 2, 4, and 5 per cent. The salt was dissolved in distilled water and then almost neutralised with a few drops of N/2 caustic soda solution. The eye was anæsthetised with 10 per cent. cocaine. After five minutes the area was outlined very superficially with a 3 mm. trephine and the epithelium within the circle completely curretted off with a knife. An applicator was then dipped into the gold chloride solution (the excess of fluid being removed by making it touch the side of the container) and applied to the area to be stained. After a minute the applicator was dried on a swab, again dipped and re-applied. This process was repeated until the solution had been in contact with the cornea for four minutes. Five to ten drops of adrenaline 1 in 1000 were then dropped into the eye. The findings were as follows:—(1) The clear cornea can be stained with 2 per cent. gold chloride to give a good dark brown. The reaction was practically *nil*. (2) With small-pox scars, it was necessary to use a 5 per cent. solution applied for four minutes. Silver nitrate and platinum chloride were practically useless. (3) The trichloracetic acid scars, stained with gold chloride, revealed a layer of fine black granules, especially numerous in the middle third of the corneal tissue. Four patients were treated by the method with good results, using a 4 per cent. solution, not neutralised, for four minutes. The method would seem to be safe and to cause less reaction than occurs after tattooing. The colour of the scar can be varied as follows:—A 5 per cent. solution produces a stain sufficiently dark for even the densest leucoma, a 4 per cent. solution is suitable for ordinary purposes, 2 per cent. produces a brownish colour which would presumably match a brown iris.

F. A. WILLIAMSON NOBLE.

(10) Koby, F. E. (Bâle).—Further remarks on fusiform pigmentation of the cornea. Concomitant peculiar pigmentation of the posterior capsule. (Nouvelles observations de pigmentation fusiforme de la cornée. Pigmentation concomitante particulière de la cristalloïde postérieure. *Rev. gén. d'Ophtal.*, September, 1927.

(10) (The reviewer is not quite certain that he has correctly translated the words *observations* and *particulière*. The former may mean "observations" of cases, and the latter may mean "particulate" or "discrete" rather than "peculiar.")

In this very interesting article on "Krukenberg's Spindle" **Koby** refers to his previous work (*Rev. gén. d'Ophtal.*, February, 1927), and to the case reported by James (*Brit. Jl. of Ophthal*, 1927, p. 148), and to that by the reviewer along with Ballantyne (*Ibid.*, p. 450). He then gives an account of three new cases of his own. Koby seems to have come to the conclusion, in opposition to the views usually held, that the corneal pigmentation is not congenital but acquired. In his article referred to above he records two cases in which the pigmentation on the posterior surface of the cornea occurred, as it were, under his eyes. The slit-lamp has produced evidence that a deposit of pigment may occur in the form of a ring at the periphery of the posterior capsule and also at the position on the posterior capsule corresponding to the canal of Cloquet. Other facts are gradually emerging. Two of his three new cases are mother and daughter, both being myopes. A similar transmission has been reported by Strebel and Steiger, and by Seissinger; thus out of some thirty cases transmission from mother to daughter has occurred three times. The greater number of the recorded cases were in females and no one has recorded a transmission from father to son. Koby's article is full of interest for those who, like him, have come across similar cases. Three quotations may be given to illustrate the direction in which Koby is tending. The first is from his article in the February number of *Rev. gén. d'Ophtal.*, above mentioned, and the other two from the present article. "In order that fusiform pigmentation of the back of the cornea may take place there must be at least two factors. The first and constant factor is the physiological current, thermal in origin, of the aqueous humour. . . . The second factor, not constant, is pigmentary disintegration. This disintegration is most often related to myopia, or to a uveitis, glaucoma, etc., and it is probable that the retinal rather than the mesodermal pigment is involved." "The pigment found at the anterior extremity of the canal of Cloquet, and similarly that forming the annular line (*i.e.*, the ring at the back of the periphery of the lens capsule) is certainly not congenital any more than the Krukenberg spindle, but is deposited during life. The question then naturally arises, is there a

physiological current in the interior of the vitreous and if so in what direction does it run? It is not possible to give a definite reply but one may suppose that there is an extremely slow current in the remains of the canal of Cloquet and in the post-lenticular space. These regions are always those in which the consistence of the vitreous is least. . . . Further research ought to show if, as I have suggested in my former work, there is a sex-linked dominance, (Fr. *dominance sex-linked*) which would be all the more worthy of interest in that of all the hereditary characters, normal or pathological, which have been studied in man, not one follows this mode of transmission."

ERNEST THOMSON.

IV.—MISCELLANEOUS

(1) **Takahashi, Takehira (Sendai).—Ophthalmological studies on the pancreatic diabetic dog together with remarks on the action of insulin. (Ophthalmologische Studien beim pancreasdiabetischen Hunde nebst Bemerkungen über die Wirkung von Insulin.)** *Arch. f. Ophthal.*, Vol. CXVII, 1926.

(1) The main object of this research on dogs from which the pancreas had been almost completely removed was to inquire into the causal relationship between diabetes mellitus and the haemorrhage and wound infection which frequently follow eye operations in diabetics.

Takahashi found that in the diabetic dog the sugar content in the aqueous fluid is approximately the same as that in the blood, and that there are no material differences between the normal and re-formed aqueous. As regards the amount of the albumen in the normal, or first aqueous there was no marked difference between the normal and the diabetic dog. In the re-formed aqueous, however, it was much less in the hyperglycaemic dog than in the normal (0.4 per cent. : 1.6 per cent.). The albumen content varies inversely to the blood sugar. The amount of fibrinogen and fibrin ferment in the aqueous varies with the albumen, and inversely to the sugar content, but the chlorides, calcium, and CO_2 are not influenced by the blood sugar. The increase or decrease in the amount of albumen, fibrinogen, and fibrin ferment in the regenerated aqueous is, in the author's opinion, of great importance in explaining the haemorrhage into the anterior chamber and wound infection following operations in diabetics. Such haemorrhages could not be attributed, in his experiments, to vascular disease from increased blood pressure. They are liable to occur according to the diminution of the fibrinogen and fibrin ferment, whereby

the power of coagulation in the aqueous is reduced. Hence the author suggests the advisability of doing a cataract extraction in diabetics without iridectomy in order to avoid the risk of haemorrhage into the anterior chamber. The tendency to wound infection is, in his opinion, most probably due not directly to the increased sugar content but to the diminished resistance of the tissues, *i.e.*, to a reduction in the anti-bodies which, varying as they do directly with the albumen-content in the aqueous, he would infer as probable from the reduction in the latter.

The administration of insulin reduces the sugar content in the anterior chamber in the same proportion as that in the blood, but it produces no alteration in the chlorides, calcium or CO_2: the amount of fibrinogen and fibrin ferment varied inversely to the sugar.

As regards haemorrhage, the diminution of the blood sugar by insulin effects an increase of the fibrinogen and fibrin ferment which raises the coagulative power of the aqueous and thereby prevents bleeding from the injured vessels. The action of insulin in diminishing a tendency to infection is most probably due to the increase in the anti-bodies corresponding with that of the albumen content.

The experimental and clinical results obtained with insulin lead the author to state, in conclusion, that, with appropriate diet and the use of insulin, extraction of cataract in diabetics can be performed without complications.

THOS. SNOWBALL.

BOOK NOTICES

The Development of the Human Eye. By IDA C. MANN, M.B., B.S.Lond., F.R.C.S.Eng., Assistant Surgeon, Royal London Ophthalmic (Moorfields) Hospital; Pathologist, Central London Ophthalmic Hospital; Ophthalmic Surgeon, Elizabeth Garrett Anderson Hospital. With a foreword by Sir John Herbert Parsons, C.B.E., D.Sc., M.B., F.R.C.S., F.R.S. Pp. 306, with 241 illustrations. Cambridge: University Press. Published for the *British Journal of Ophthalmology*, 1928. Price, 36s.

That it is best to commence at the beginning in order to obtain a comprehensive knowledge of the subject may seem a trite observation, but for a budding ophthalmologist to commence at the beginning of his subject and study the embryology of the eye has so far been beset with difficulties. If he has endeavoured to study it practically he has encountered the difficulty of obtaining human material in a

sufficiently fresh condition, and has had to resort to that from the lower vertebrates or birds. If he has turned to treatises on anatomy and ophthalmology he has found, as Sir John Parsons points out in his "Foreword," the embryology of the eye dealt with only superficially and lacking in detail. This monograph of Miss Mann's on "The Development of the Human Eye" will help to smooth the way for all future students of the subject.

Miss Mann has, through Professor J. Ernest Frazer, had the good fortune of having access to a most comprehensive series of well preserved human embryological specimens. From these she has made excellent drawings clearly representing the various tissues of the eye in all stages of their development. These drawings, together with a number of diagrams, reproduced in the book, amount to 241 figures. The reader has therefore placed before him as he proceeds graphic representations of the changes which are being described and discussed.

The subject is divided up under the following nine headings:— 1. The early stages of the formation of the primary optic vesicle. 2. A general outline of the development of the optic vesicle and the associated mesoderm. 3. The lens. 4. The neural ectoderm. 5. The vitreous and suspensory ligament of the lens. 6. The associated mesoderm. 7. The orbit and its contents. 8. The phylogenetic development and morphology of the human eye. 9. Synoptic comparison of ocular and general development.

At the end of each section a short description is given of some of the abnormalities met with in the development of the part which has been described.

The following quotations will serve as samples of Miss Mann's many interesting findings and conclusions:—

"The invagination and formation of the foetal cleft is an inherent property of the vesicle existing to ensure the provision of a clear path from the inner (nerve-fibre-bearing) layer of the optic cup to the brain, *viâ* the primitive epithelial papilla and the inner layer of the optic stalk."

"The cornea, lens, and vitreous retain their embryonic quality of transparency throughout life, so that one should rather speak of a process of opacification of all the other tissues than of clearing of these transparent ones during development."

"The first formed lens fibres appear to be the most transparent, which property they share with other early embryonic tissues. The later fibres become progressively less and less transparent so that in extreme old age the presence of definite opacities in the equatorial region of the cortex is so common as to be almost the rule."

"At this stage (4.5 mm.) the walls of the whole central nervous system become vascularised by the invasion of fine capillaries, which grow into them from the net of thin-walled vessels which is beginning

to cover the surface of the neural ectoderm. This vascularisation occurs on the surface of the optic vesicle as well as over the rest of the fore-brain. In the fore-brain and other parts of the central nervous system it apparently persists and the little capillaries give rise to the definitive vessels of the brain substance, but in the optic vesicle the capillaries only remain until just after the 7 mm. stage. They then disappear entirely and the developing retina is completely avascular until the appearance of the *arteria centralis retinae* at 100 mm."

"The early appearance, as distinguishable elements, of the fibres of Müller is in keeping with the general rule of development that supporting tissues are first developed so as to serve as a scaffold around which can be built later the more important and highly specialised tissue."

"Differentiation of the retina into its layers takes place by the migration of the cellular products of division of the proliferating layer towards the inner surface."

"It should be realised that this differentiation proceeds in the inverse direction to the path of the final nerve impulse, the ganglion cells and nerve fibres being the first of the adult retinal elements to appear, and the rods and cones the last. The result of this is that, at the time when the percipient elements themselves appear, the layers internal to them are complete and ready to function as conductors immediately."

The internal limiting membrane of the retina is formed from the foot-plates of the fibres of Müller. "There is never anything to be seen in embryonic stages to warrant the assumption that a hyaloid membrane separating the vitreous from the retina exists apart from the internal limiting membrane which itself appears to be in continuity with the two." "When shrinkage occurs, as it does with great frequency in older material, the internal limiting membrane tears away from the retina and remains in continuity with the vitreous." Probably this is the explanation of why so many observers have described the vitreous as having posteriorly a limiting hyaline membrane.

"The early appearance of distinguishable ganglion cells at the same time or even a little before the growth of nerve fibres towards the optic stalk is of importance, since many observers in the past have advanced the theory that the fibres of the optic nerve were central in origin and that they grew from the brain towards the eye during development. A study of the retina at this stage serves to show beyond a doubt that they arise from the ganglion cells of the retina and extend centripetally."

"Later the fibres of Müller extend to this outer edge (of the retina) and form by the union of their outer processes a membrane resembling the internal limiting membrane but more delicate and

richly fenestrated. From the protoplasmic nature of the inner limbs of the rods and cones it is obvious that they must carry with them a covering derived from the original cell boundary (embryonic external limiting membrane) from which they are an outgrowth, and since they appear before the growth of the outer processes of the Müllerian fibres it seems equally certain that they derive no covering from the definitive external limiting membrane, but simply come to protrude through its fenestrations when these are formed later around their bases."

"It is worthy of note that while an appearance of cilia can be seen continuously on the inner wall of the optic cup, the outer wall cells very definitely lose them soon after the development of the pigment granules. One is therefore safe in drawing at least a close parallel, if not a definite derivative relation between cilia and the primitive outer limbs of the visual elements."

The percipient elements "begin to show in the central region at about the 48 mm. stage, and their appearance marks the cessation of cell division in that area."

With regard to the development of the optic nerve, we read :—

"There was no medullation at all at five months. In the 37 cm. (*circ.* seven months) foetus, medullary sheaths could be traced from the optic tract to the beginning of the optic nerve, and by term these had reached the *lamina cribrosa*. The medullation appears first as minute droplets of a lecithin-containing substance in the protoplasm of the glial cells. These droplets run together and surround the axis cylinders."

"The three periods of vitreous development may be summarised thus :—*First period*, up to 13 mm. Formation of primary vitreous from ectoderm of lens plate and optic vesicle, with secondary ingrowth and incorporation of vascular mesoderm. This stage ends with the secretion of the hyaline capsule of the lens, which prevents the lens taking any further part in vitreous production.

Second period, up to 65 mm. Formation of secondary vitreous from outgrowth from inner layer of optic cup, and from peripheral portion of existing vitreous by atrophy of *vasa hyaloidea propria*. A line of condensation appears, separating the central vascular remains of the earlier vitreous, which ceases to grow after the 40 mm. stage, from the peripheral avascular secondary vitreous. Stage of formation of Cloquet's canal and the capsula perilenticularis or anterior portion of the hyaloid membrane. This stage ends with the appearance of the ciliary region roughly between 50 and 60 mm.

Third period, from 65 mm. onwards (third to sixth month). Formation of tertiary vitreous from the neural ectoderm of ciliary region, and differentiation of this to form zonule fibres. Atrophy of the 'faisceau isthmique' of Druault and formation of the lateral condensation between secondary and zonule fibres, namely the

'lateral part of the anterior hyaloid membrane.' This stage ends when the secondary vitreous is completely marked off from the tertiary,"

"The *arteria centralis retinae* is just recognisable at 100 mm. (fourth month). At this time a small bulbous swelling appears on the trunk of the arteria hyaloidea just where it is passing through the disc. This enlarges, and from it two small buds grow out, one from its upper aspect, and the other from its lower. These are the beginnings of the upper and lower main branches of the arteria centralis retinae. Other arterial twigs arise from these and the bulb of the main artery, and ramify in the little cone-shaped mass of cells (Bergmeister's papilla) in the centre of the disc."

"It appears to be a general rule that the anterior portion of the sclera should appear first and progress farthest during embryonic life in all species. This may also be correlated with the fact that in the pathological condition of progressive myopia (of the developmental origin of which there is considerable evidence) it is the posterior part of the sclera which suffers the greatest stretching and deformity."

These extracts, chosen somewhat at random, will, it is hoped, stimulate the appetite of the readers of this Journal to have recourse to the book itself, in which we can assure them they will find ample material for the satisfaction of an appetite so stimulated.

The least satisfactory part of the book is the method which the author has adopted in connection with references to previous writers on the subject. There is a bibliography at the end in which references are arranged in chronological order from the year 1751 onwards, but it is far from complete, and curiously enough many writings by British authors are omitted. No numbers are attached to these references, so that where an author is quoted in the text it is only with considerable difficulty that the source of the quotation can be found.

It is improbable that this book, of which the numerous illustrations form such an essential feature, and which deals with a highly specialised subject, could have been produced as a commercial undertaking. It is satisfactory that the directors of the *British Journal of Ophthalmology* have been able to supply the necessary financial assistance.

Ueber Homonyme Hemianopsie. By E. BUNGE. Pp. 51, with one plate. Berlin: S. Karger, 1928. Price, 2.80 marks.

Bunge's work on homonymous hemianopia is one of the useful series of supplements issued by the *Zeitschrift f. Augenheilkunde*, under the editorship of C. Behr and J. Meller.

It begins with a brief account of the anatomy and physiology of the optic tracts as concerned in homonymous hemianopia. The

greater portion of space is devoted to an account of illustrative cases grouped under the two main headings of lesions of the tract and central lesions of the primary optic centres (supranuclear lesions). Bunge lays great stress on the importance of the hemianopic pupil reaction in the differentiation of the two groups. An interesting exception is quoted (case 27) in which the lesion was due to an occipital tumour, but in which also a hemianopic pupil reaction was observed. In this case there was extensive destruction of the occipital convolutions, and the author suggests that pressure on the pupillary tract on the right side between the corpus geniculatum laterale and the anterior corpus quadrigeminum may have accounted for the phenomenon. Appearances of compression were actually observed in the neighbourhood of the corpora quadrigemina and thalamus.

The author has some interesting comments to make on the various explanations offered to account for the sparing of the macula, and does not support Wilbrand's suggestion of a double supply. The plate gives a semi-diagramatic representation of the optic tracts with the corresponding binocular field of vision.

The Alien Menace. By LIEUT.-COL. A. H. LANE. London: King and Sons, 1928.

"The difficulties through which our country is passing are due not to one cause, but to many causes . . . And one of the greatest of these is the alien trouble." In a book of 87 pages, Lieut.-Col. Lane presents a striking picture of the material and moral harm done to England by alien immigration. He considers that aliens are responsible for our over-population, unemployment, and increase in disease.

It is the alleged increase in an eye-disease with which we are concerned, namely, trachoma. The author states that this disease has been re-imported into this country through the medium of Germans and Russians. If this is the case it is a national disaster. We have therefore enquired at three London ophthalmic hospitals and at three London general hospitals as to whether there has been any increase in trachoma in the last ten years as seen among the out-patients. The reply has been the same in all cases, that very few cases of the disease are seen now-a-days. It therefore appears that the author has failed to establish one of his theses. His other points are beyond the scope of this Journal.

OBITUARIES

FELIX LAGRANGE

THE death of PROFESSOR FELIX LAGRANGE has removed one of the most distinguished ophthalmic surgeons of the present day. He had recently retired from the Professorship of Ophthalmology at the University of Bordeaux to reside in Paris. At the beginning of his career he served for ten years as a military surgeon, and then took up the serious study of ophthalmology. At first his interest was directed to errors of refraction and to strabismus, later he published his monumental work on tumours of the eye and orbit. But he will be known pre-eminently as having introduced the operation of sclerectomy in the treatment of glaucoma, in 1906.

In 1927, on his seventieth birthday, a volume was published in his honour by his pupils and friends containing the more important extracts from his writings on ophthalmology, as well as other material.

Although a noted controversialist on ophthalmic matters where he considered some principle at stake, he was a sympathetic and sincere friend to those who knew him.

MARC LANDOLT

DR. MARC LANDOLT has met a tragic death by drowning. While sailing on the Seine with his two children his boat was capsized. He was able to bring the children to the boat and they were saved, but he himself became exhausted and was lost.

He was the elder son of the late Dr. Edmond Landolt who was an honorary member of the Ophthalmological Society of the United Kingdom, and a Bowman Lecturer, and was himself a member of the Society. In Paris he was a distinguished ophthalmic surgeon.

The sincere sympathy of all members of the Ophthalmological Society is extended to his family.

NOTES

Appointments

MR. J. S. ARKLE, has been appointed Honorary Ophthalmic Surgeon to the Royal Victoria Infirmary, Newcastle-on-Tyne.

DR. SUSIL KUMAR MUKERJEE and DR. TAJAMMAL AHMED have been appointed Honorary Ophthalmic Surgeons to the Bengal Medical College Hospital.

* * * *

Ophthalmic Lectureship

PROFESSOR WRIGHT stated at the Prize distribution of the London Hospital that a Lectureship in ophthalmology has been established with a legacy of £1,000 from the late Mr. Waren Tay.

* * * *

Restoration of Sight to the blind in a Greek play

THE PLUTUS, by Aristophanes, deals with the ancient problem, why do the ungodly prosper, while the righteous are always needy? This query is answered with a jest: it must be that wealth is blind. He is restored to sight, and the tables are turned.

The relevant passage is as follows: our translation is taken from the Loeb Classical Library edition.

> Well, first he set himself to mix a plaster
> For Neocleides, throwing in three cloves
> of Tenian garlic; and with these he mingled
> Verjuice and squills; and brayed them up together
> Then drenched the mass with Sphettian vinegar,
> And turning up the eyelids of the man
> Plastered their inner sides, to make the smart
> More painful. Up he springs with yells and roars
> In act to flee; then laughed the God, and said,
> *Nay, sit thou there, beplastered; I'll restrain thee,*
> *Thou reckless swearer, from the Assembly now.*

OPHTHALMIC LITERATURE

American Journal of Ophthalmology. *June, 1928.*

DOBSON, MARGARET AUSTIN. Examination of the fundus oculi by light of a limited spectral range.
MORSMAN, L. W. Velonoskiascopy.
SZOKOLIK, EDUARD. Technique of conjunctivoplasty.
BLAAUW, E. E. Birth trauma to the cornea.
EVANS, JOHN N. Reflection illuminator for perimetric studies of bed-ridden patients.
CALLENDER, GEORGE R., and CAMPBELL, HELEN. Ophthalmic pathology, report of the section on ophthalmic pathology of the Army Medical Museum.
LORD, FREDERICK T. Serum disease and serum accidents.
HOBART, CARL. Iridoschisis.
SWAB, CHARLES M. Sympathetic ophthalmia with myopia as initial symptom.
MAYER, LEO L. Impressions of European eye clinics.

La Clinique Ophtalmologique. *April, 1928.*

BLUM, JEAN. Contribution to the study of the late oculo-motor syndrome in epidemic encephalitis.
DUGGAN, J. N. Treatment of purulent infections of the eye by intravenous injections of mercurochrome.
KAZ, R. Paradoxic strabismus of the blind.
Confirmed and imminent blindness in glaucoma.

Revue Internationale du Trachome. *April, 1928.*

TRAPESONTZEWA, C. Certain epidemic characters of trachoma.
ZACHERT, M. Contribution to the epidemiology of trachoma in Poland.

Archives médicales Belges *June, 1928.*

ELEWAUT. The diagnosis of metallic intraocular foreign bodies.

Annales d'Oculistique. *May, 1928.*

BAILLIART, P. The retinal arterial pressure.
LAGRANGE, HENRI. Notes on spring catarrh and its connection with the neuro-arthritic syndrome of infants.
LODDONI. A case of hysterical ocular syndrome.

June, 1928.

MORAX, V. Note on an affection of the cornea characterised by pseudo-membranous exudates, lesions of the cornea and formation of reciditive granulomas.
BOURGUET and DESVIGNES. Cystic tumour of the pituitary fossa.
COLLOMB, A. Voluntary nystagmus.
ROY, J. N. Electric shock. Some medico-legal considerations.

Archives d'Ophtalmologie. *May, 1928.*

TEULIÉRES, M. Felix Lagrange. 1857-1928, obituary.
DE LAPERSONNE, F. Marc Landolt, obituary.
TERRIEN, F., RENARD, G., and DOLLFUS, M. A. Papilloedema and serous ependymitis.
GRAF, CORNÉLIE, and MIKULINSKA, JEANNE. An interesting case of partial oedema of the nerve head with simultaneous partial atrophy.
PIRIÉS, L. Operative treatment of the corneal lesions of acne rosacea.

June, 1928.

ESCAT, E., and FRENKEL, H. E. On some cases of optic neuritis cured by removal of the middle turbinal and trephining of the sphenoidal sinus.
RENARD, GABRIEL. Compression of the thorax followed by immediate and permanent blindness.
SAINTON, PAUL, and RENARD, GABRIEL. Cataract, tetany, and dwarfism.

Bulletin de la Société Belge d'Ophtalmologie. *May, 1928.*

KLEEFELD, M. Bio-microscopy of the lens.
DANIS, M. Cirsoid aneurysm of the central artery of the retina.
VAN LINT and DE VAUCLEROY. Slit-lamp examination of the path in the lens of a splinter of iron.
WEEKERS, M. Visual acuity of motor drivers.
WIBO and ALBAERTS. Ethmoiditis with grave ocular involvement without ophthalmoscopic or radiographical signs.
VAN DUYSE and VAN WEYMEERSCH. Tuberculosis of the lacrymal gland.
BRANDÈS. Blindness and encephalitis lethargica.
BICHELONNE. A case of adaptation of an ocular prosthesis.

WEEKERS, L., and MISSOTTEN, R. Does amaurosis gravidarum, wrongly named uraemic amaurosis, necessitate interruption of pregnancy?
KLEEFELD, M. G. Artificially produced conjunctivo-scleral adhesion and its utility in muscular advancement.
BAUWENS, VAN BOGAERT, and DANIS. A case of Tay-Sachs' disease.

Archiv für Ophthalmologie. *June, 1928.*

SUNDQUIST, M. On the theory of spectacles and magnifying glasses.
LENHARD, OSCAR. Regeneration of the lens in thyroid deficiency.
CORDS, RICHARD, and NOLZEN, LIESEL. Further observations on optokinetic nystagmus.
SIEGFRIED, W. Experimental investigation on the supposed noxious influence of ultra-violet light on the adaptation of the eye.
MÄSHLER, JOSEPH. On corneal refraction in anisometropia.
AAZAKAS, ALEXANDER. On central and peripheral acuity for colours.
GEHRCKE, E. On the Haidinger polarisation rays on the macula.
BÖHM, JUNR. Acute glaucoma in both eyes after glaucosan drops.
SHIRAISHI, KENSAKU. The effect of crushing and extirpation of the ciliary ganglion on the cornea of the other eye.

Klinische Monatsblätter für Augenheilkunde. *June, 1928*

SEIDEL, E. New observations on tne metabolism of the intra-ocular fluids and the maintenance of the intra-ocular pressure.
POOS, FR. On the question of the sympathetic innervation of the ciliary muscle and its bearing on accommodation.
LEMBECK, G. Practical results with Comberg's X-ray localisation method.
FAZAKAS, A. On the topography of the lacrymal fossa with reference to operations on the sac.
Epiphora atonica.
ISHIKAWA, F. Deficient lacrymal secretion as a congenital anomaly.
HALBERTSMA, K. T. A. On certain hereditary and familial eye diseases
KUGELBERG, F. Knapp's tattooing.
GOEBEL. On fixation of the eye.

Zeitschrift für Augenheilkunde. *June, 1928.*

DINGER, G. Vessels on the anterior capsule of the lens without obvious pigmentation.
ELKES, G. The tissue-free bacterial filtrate of Besredka, and its therapeutic application to eye diseases.
FILATOW, W. On keratoplasty with partial penetration.
SCHINDLER, EMMA. Haemangio-endothelioma in the upper lid and the orbit in young children.
ROBINOWITSCH, M. Uniocular nystagmus.
HEYYSTER, H. Disturbance of the pupil and length of life.

Annali di Ottalmologia e Clinica Oculistica. *June, 1928.*

SCALZITTI. Specific therapy in syphilitic eye infections and the necessity for the serological reaction of the cerebro-spinal fluid.
CUCCHIA. On the behaviour of the corneal curve in human foetuses.
BARLETTA. Contribution to the study of cavernous angioma of the orbit.
TESSIER. The physiological pit in relation to the static refraction.
SANTONASTASO. Contribution to the study of rare epibulbar tumours.
HORNIKER. A new point of view on the pathogenesis of certain degenerative, ocular lesions.

Archivio di Ottalmologia. *May, 1928.*

ROSSI, V. On "Pre-trachoma."
SGROSSO, S. Trachoma, follicular conjunctivitis, conjunctival tubercle, histo-pathological contribution.
FANELLI, A. Base line and interpupillary distance in the correction of errors of near vision.

Revista Oto-Neuro-Oftalmologica. *March-April, 1928.*

CARMI, A., and PIETRANTONI, L. Contribution to the study of retrobulbar neuritis in connection with congested states of the orbito-nasal region.
PALLESTRINI, E. Clinical researches on so-called compensatory rotatory nystagmus.
BOMBELLI V. A case of cerebral abscess from latent sphenoidal sinusitis in a patient with grave ocular complications.
RAVERDINO, E. Calcification of orbital and endocranial vessels in a patient with spontaneous cure of proptosis from an arterio-venous aneurism.
PODERTÀ. Oculo-gyratory crises and labyrinthine function in post-encephalitic Parkinsonian syndrome.
CACCIALUPI, P. The cranial sympathetic and the sphenoidal ganglion with special regard to naso-ocular connections.

Archivos de Oftalmologia de Buenos Aires. *April, 1928.*

SATANOWSKY, PAULINA. Is the light of Neon harmful to the eyes?
LINNEN, SILVA. Pupil reactions in homonymous hemianopia.
SANTA CECILIA, J. Negro's sign in facial paralysis.

May, 1928.

ARGAÑARAZ, RAÚL. Is functional strabismus a toxic infective disease similar to infantile paralysis?
MANES, ANTONIO J. Toti's operation. Result of 90 cases.
SATANOWSKY, PAULINA, ANDROGUÉ, ESTABAN, and SENÀ, JOSE A. Tumours of the caruncle.

Revista Oto-Neuro Oftalmologíca y de Cirurgiá Neurológica. *April-May, 1928.*

CASTER and CAMANER. Meningoblastoma of the skull base, compressing and destroying the temporo-sphenoidal lobe.
LIJO, PAVÍA. Incipient central oedema of retina.
GULTIÉRREZ. Access to the optic chiasm and to the hypophysis by the median frontal route.
FERRER Y DÍAZ. Lesions of the optic nerve due to pituitary tumours.